



**GENERAL INFORMATION** 



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Engineering, Inc.

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# 2020 Engineering Excellence Awards Competition Judges' Resource Manual & Informational Overview

# INTRODUCTION

Welcome to ACEC's 2020 Engineering Excellence awards competition. We are anticipating approximately 170 outstanding projects that will compete for the top honors. This may seem a little overwhelming to the first-year judges, but be assured, the process is efficient and can accommodate these numbers. We have prepared this handbook to provide an overview of the judging process and other logistic information pertaining to your stay at the Westfields Marriott. The EEA Committee will always be available to facilitate your needs. The judging process is intense but not without benefit. It is our intent that you gain knowledge, make lasting friendships, and enjoy the professional and social interaction with your peers.

#### PREPARATION AND HOMEWORK ASSIGNMENT

Approximately 10-14 days prior to your arrival at the Westfields Marriott, you will receive an email from Daisy Nappier with your log in information to the EEA Judging Module. There you will have access to all projects entered in the competition. The email will indicate which projects you need to review in advance.

You should review the following materials:

- Application Form
- Executive Summary One Page
- Project Description Five Pages
- Project Panel.

As you review your assigned submissions, please refer to the 2020 EEA Call for Entries, also located in the EEA Judging Module. Your homework assignment consists of reviewing the materials and providing an initial score for each of the projects. The scores will be used as a guide when you get together with your fellow judges in D.C. on Friday afternoon. At that time you will decide which projects should move forward and which ones should be eliminated from further consideration.

In summary, your homework assignment consists of:

- Reviewing the executive summary, project text, and the panel and providing a whole number numerical score for each of your assigned projects.
- Providing your scores via the online system, by Monday, February 3, 2020.

This exercise not only provides a comparative ranking of all projects, but also will give you familiarity with selected projects you will be asked to advocate to the entire judging panel.





# THE WESTFIELDS MARRIOTT FACILITIES

The judging will be held at the Westfields Marriott, located in close proximity to the Dulles International Airport, in Chantilly, Virgina. All activities associated with this event will be at this facility. Rooms have been reserved in your name and all meals will be provided in the Fairfax Room. A gym, pool, and whirlpool are also available at the resort and there is a social lounge located on the premises. If there is any issue regarding your accommodations, please inform Daisy Nappier.

You will have opportunities to meet casually with the other judges during the event. We encourage interaction during the breaks, cocktail receptions, meals and other free time. This contact can result in a memorable and enjoyable professional experience for you.

#### **EXPENSE REIMBURSEMENT**

ACEC is appreciative of your professional experience and expertise, as well as your valuable time. ACEC will pay for all your expenses for travel, lodging and meals at the Westfields Marriott. These include:

- Round trip airfare to the Dulles International Airport, in Herndon, Virgina.
- Transportation to and from the airport to the Westfields Marriott.
- Automobile transportation costs, including accommodations and meals, if required, during transit, instead of airfare.
- Transportation to and from the airport or rail station near your residence.
- Accommodations and all meals at the Westfields Marriott for you and your spouse (travel costs for the spouse are not reimbursable).
- Please note that all meals must be eaten in the Fairfax Room. Meals eaten in other locations or room service are not reimbursable.

You will be provided with an Expense Reimbursement Form. Checks will be sent to you for your expenses as soon as this form is received by ACEC.

#### **ATTIRE**

Dress for the entire judging will be business casual.





#### POTENTIAL CONFLICT OF INTEREST

Situations occur periodically that could be considered a conflict of interest. We have a few guidelines that identify and allow you to be excused from a potential conflict situation. We consider it to be a conflict on a particular project if the following applies:

- If you or your immediate family members have worked for either the consulting firm and/or the client/owner.
- If you have participated previously as a client, owner, advisor, consultant or in a review capacity for an entered project.

In case of a conflict, please adhere to the following guidelines:

- Advise the Chief Judge, John Yonan.
- Refrain from judging the specific project(s) during the initial review.
- Refrain from discussing or commenting on any element of the project.

You may be eligible to vote for the project(s) subsequently, if approved by the Chief Judge.

#### **AGENDA**

For first-year judges, please attend the Judges' Onboarding Session, beginning at 1:00 p.m. on Friday. A detailed agenda will be provided at the Introductions orientation session for all judges, which begins at 2:30 p.m. on Friday.

#### ROLE OF EEA COMMITTEE MEMBERS

EEA Committee Members will be facilitating the process and are available to assist the judges with any administrative needs. They can address process and logistical questions. We encourage you to communicate and interact with the committee members but avoid any discussions related to the merits of a project. You may seek guidance from the Chief Judge or from other senior judges (returning 2nd and 3rd year).





# THE JUDGING PROCESS

# **ENTRY CATEGORIES**

Entries are submitted by engineering firms located in the United States for projects undertaken anywhere in the world. Entries will be judged in each of the following 12 categories:

- A. Studies, Research, and Consulting Engineering Services
- B. Building/Technology Systems
- C. Structural Systems
- D. Surveying and Mapping Technology
- E. Environmental
- F. Waste and Storm Water
- G. Water Resources
- H. Transportation
- I. Special Projects
- J. Small Projects
- K. Energy
- L. Industrial and Manufacturing Processes and Facilities.

#### **RATING GUIDELINES**

Entries will be judged using the following rating guidelines:

- Uniqueness and/or Innovative Applications of New or Existing Techniques
- Future Value to the Engineering Profession and Perception by the Public
- Social, Economic, and Sustainable Development Considerations
- Complexity
- Successful Fulfillment of Client/Owner Needs.

Please refer to the 2020 Call for Entries for the detailed judging criteria.

# **REVIEW OF PROJECTS BY JUDGING GROUP**

On Friday, February 7, 2020, between 4:00 p.m. and 5:45 p.m., you will have an opportunity to review and/or discuss your scoring for the initial 20-35 projects with your Judging Group. Four to six judges will be assigned to each Group and each one of them will be responsible for reviewing the identical 20-35 projects.





# **ADVANCEMENT OF PROJECTS**

Your Judging Group will collectively decide which entries within your group of projects merit further advancement.

- Individual judges within the group will collectively choose which projects each to advocate for further advancement.
- Each judge will be responsible for making a presentation to all judges for the two or three projects he or she will be advocating. The presentation will be limited to three minutes with an additional minute for questions and answers.
- The online system contains information to assist you for the presentation and for subsequent questions from other judges. Photos of each project will be available for projection during your discussion. You can present project information in any style that suits you. It is not necessary or advisable to mention the submitting firm name during the presentation.

#### SELECTION OF THE TOP PROJECTS FOR NATIONAL AWARDS

Ultimately, the EEA Judges will select the top projects for national award recognition: 20 Honor Awards and 16 Grand Awards. In addition, a Grand Conceptor winner will be selected from the 16 Grand Awards. The Grand Conceptor Award is the project that best exemplifies Engineering Excellence as defined by the rating guidelines.

The process for selecting the Grand Conceptor Award is as follows:

- Each champion for the 16 Grand Awards will make a two-minute presentation to the judging panel and specifically address criteria and the rating guidelines.
- The judges (including the Chief Judge if there is an even number of judges) will vote by a secret ballot and if there is a project that receives a 2/3 majority vote it will be declared the Grand Conceptor.
- If a project doesn't receive a 2/3 majority vote, approximately the top three or four voted projects will then be identified for further debate. The voting count will be kept confidential from the voting judges.
- Following a timed period of debate and discussion, another secret vote will be conducted. If a project receives a majority of votes that exceeds the second place vote greater by five or more, then that project will be declared the winner.





## **RECOGNITION OF JUDGING PANEL**

As a token of their appreciation and sincere thanks for your time and talent, ACEC will send you a photograph and special gift to commemorate your participation as an EEA judge.

The 36 winning projects will be highlighted during the EEA Gala Evening to be held on Tuesday, April 28, 2020 at the Washington Marriott Wardman Park in Washington, D.C. This black-tie event has truly become the "Academy Awards" of the engineering industry. You will be invited as a special guest of ACEC and will be recognized during the Gala.

See you in February at the Westfields Marriott!





# **JUDGES' AGENDA**

ACEC Engineering Excellence Awards
Westfields Marriott
14750 Conference Center Drive
Chantilly, Virginia 20161

## FRIDAY, FEBRUARY 7, 2020

\*All events will take place in the Jeffersonian Ballroom, unless noted otherwise.

#### Welcome

1:00 p.m. – 2:00 p.m. Firstyear Judges Onboarding Session

2:00 p.m. – 2:30 p.m. Introductions and Remarks

EEA Committee - Chair Andy Ciancia What Engineering Excellence Means Agenda Review - Chief Judge, John Yonan

2:30 p.m. - 2:35 p.m. Administration Remarks - Daisy Nappier

2:35 p.m. – 2:45 p.m. Voting Module Demonstration

Paul Finkel, PODI

#### **EEA Orientation & Review**

2:45 p.m. – 3:30 p.m. Judges Orientation

Introduction Activity - John Yonan

3:30 p.m. – 3:45 p.m. Break

3:45 p.m. – 5:30 p.m. Review of projects and start to determine which projects to advance and

assign project champions. Once assigned, champions can begin work on

their presentations.

5:30 p.m. - 6:00 p.m. Break

#### **Social Time**

6:00 p.m. – 7:00 p.m. Chairman's and President's Reception

ACEC President and CEO - Linda Darr

ACEC Chairman - Mitch Simpler

7:00 p.m. Dinner (Fairfax Room)





# SATURDAY, FEBRUARY 8, 2020

\*All events will take place in the Jeffersonian Ballroom, unless noted otherwise.

#### **Breakfast**

7:00 a.m. – 8:00 a.m. Breakfast (Fairfax Room)

**Judging Session 1** 

8:00 a.m. - 9:15 a.m. Projects are presented and questions are allowed as appropriate.

Judges make notes on executive summaries provided. Timer will be used to limit

each presentation to 3 minutes and Q&A's to 1 minute.

9:15 a.m. - 9:30 a.m. Break

9:30 a.m. – Noon Project presentations continue

Lunch

12:00 p.m. – 1:00 p.m. Lunch (Fairfax Room)

Judging Session 2 Jeffersonian Ballroom

1:00 p.m. – 3:00 p.m. Project presentations continue

3:00 p.m. – 3:15 p.m. Break

3:15 p.m. – 4:45 p.m. Project presentations continue

4:45 p.m. – 5:15 p.m. Judges vote in online module for advancement of projects

5:15 p.m. – 5:45 p.m. Committee generates voting results and displays for initial ranking of

top 36 projects.

**Social Time** 

5:15 p.m. - 6:00 p.m. Cocktails and Conversations

6:00 p.m. – 7:30 p.m. Dinner (Fairfax Room)

Judging Session 3 Jeffersonian Ballroom

7:30 p.m. – 9:30 p.m. Review initial ranking and debate; finalize top 36 projects

9:30 p.m. – 10:30 p.m. Committee prepares electronic files for final presentations.





# SUNDAY, FEBRUARY 9, 2020

\*All events will take place in the Jeffersonian Ballroom, unless noted otherwise.

#### **Breakfast**

7:00 a.m. – 8:00 a.m. Breakfast (Fairfax Room)

# **Judging Session 4**

8:00 a.m. – 9:20 a.m. Brief presentation on final 36 projects 9:20 a.m. – 9:40 a.m. Judges vote for top 16 national winners

9:40 a.m. - 9:55 a.m. Break

Committee generates voting results

9:55 a.m. - 10:25 a.m. Judges review and finalize 16 Grand Award projects

10:25 a.m. - 11:00 a.m. Judges selection of the Grand Conceptor project

(including brief presentations of the final 16 projects)

#### **Final Issues**

11:00 a.m. – 11:10 a.m. Wrap-up and evaluation of judging process

11:10 a.m. EEA Committee Chair Andy Ciancia (Post Remarks)

#### **Sunday Brunch**

11:15 a.m. Adjourn and brunch (Fairfax Room)

# ACEC Reimbursement Request: Officers and Committee Members

Please submit completed form for approval as follows:

ExCom Member or Committee Chair: Please send to the Treasurer.\*

ExCom Member Attending Committee Meeting: Please send to Committee Chair.\*

Committee Member: Please send to the Committee Chair.\*

Date:					, and t		1 . 24 . 1
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Approved by:(Signature)				Date.			

Attn: Treasurer or Committee Chair - Please submit completed and approved form to:

American Council of Engineering Companies

1015 15<sup>th</sup> St. NW, 8<sup>th</sup> Floor

Washington, DC 20005-2605

\* Please attach receipts. All expenses must be itemized and documented for IRS purposes. To be eligible for reimbursement, request must be for expenses within the budget and submitted within 30 days after the expense was incurred.

# Instructions for ACEC Reimbursement Requests

All reimbursements will be made in accordance with the most recently revised Reimbursement Policy for Officers, Committee Members & Spouses.

The Committee Chair will be advised by Staff of the amount budgeted for the Committee's operations.

Committee Members must send their <u>completed</u> reimbursement request, along with <u>all receipts</u>, directly to the Committee Chairman (not to ACEC) within 30 days. <u>Please be aware that no one can be paid until all the forms are submitted.</u>

After receiving <u>all</u> of the Committee Members' request forms, and only then, does the Chairman determine the pro-rata reimbursement amount.

The Chair approves and signs the reimbursement requests and then forwards the paperwork on to ACEC's Accounting Department (attention: Director of Finance) for processing of the reimbursement checks.

Committee meetings held in conjunction with the ACEC Annual or Fall Conference meetings are not reimbursable except as authorized in the Reimbursement Policy.

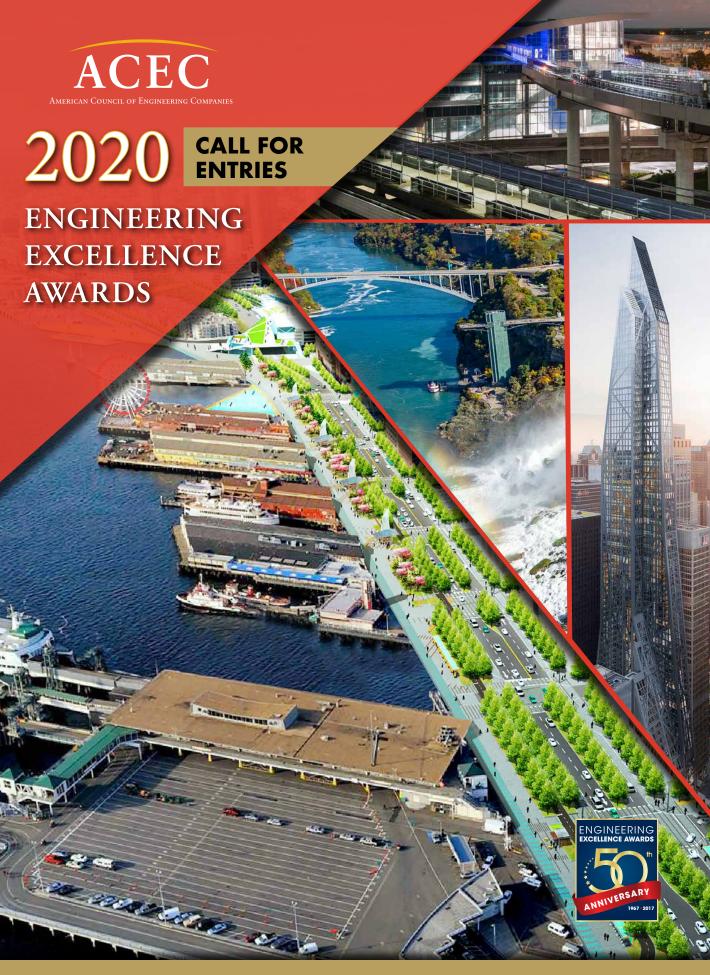
# Reimbursable expenses include:

- Travel by commercial carrier (least expensive economy class fare) to and from meetings non refundable ticket, 21 days in advance purchase
- Auto expenses at the current IRS allowable rate per mile when commercial transportation
  is not available, and for ground transportation to and from terminals. If personal or rental
  auto travel is chosen for personal reasons, maximum reimbursement will be limited to the
  cost of economy air travel as stated above
- Hotel accommodations limit to a reasonable amount for a business hotel in that city (estimate \$150)
- Meals when authorized per Reimbursement Policy (Breakfast \$15, Lunch \$20, Dinner \$64)
- Postage, telephone, FAX, internet charges, and reproduction expenses related to Committee activity

#### Non-reimbursable expenses include:

- Laundry, dry cleaning
- Tips and other expenses for personal services
- Entertainment of any form, or expenses such as Limousine service, etc.
- Personal phone calls
- Optional events, tours

As a rule, ACEC Headquarters will provide printing, reproduction, general mailing and other support services. However, under special circumstances, this type of expense may be reimbursed, but it must come out of the Committee budget.



# 2020 CALL FOR ENTRIES

# **ENGINEERING EXCELLENCE AWARDS**

The American Council of Engineering Companies' (ACEC) annual Engineering Excellence Awards (EEA) competition recognizes engineering firms for projects that demonstrate an exceptional degree of innovation, complexity, achievement and value.

American engineering firms have entered their most innovative and complex projects and studies in competitions conducted by state member organizations (MOs). Qualifying projects at the state MO level are then eligible to participate in the ACEC national competition. Deadline for the national competition is Friday, January 3, 2020.

EEA entries are accepted into one of 12 project categories:

- Studies, Research and Consulting Engineering Services
- Building/Technology Systems
- Structural Systems
- Surveying and Mapping Technology
- Environmental
- Waste and Storm Water
- Water Resources
- Transportation
- Special Projects
- Small Projects
- Energy
- Industrial and Manufacturing Processes and Facilities

A distinguished panel of 25-30 judges possessing a vast array of built environment and technical expertise will be convened over three days to evaluate and rank submissions for engineering excellence. The panel then selects top award winners—16 Grand Awards and 20 Honor Awards. One Grand Conceptor Award will be selected from the Grand Award winners as the overall best engineering project.

Projects from all across the world are rated on the basis of: uniqueness and/or innovative application of new or existing techniques; future value to, and enhancing public awareness/enthusiasm for the engineering profession; social, economic, and sustainable development considerations; complexity; and successful fulfillment of client/owner's needs, including schedule and budget.

Top Award Winners (Grand and Honor) must have a firm and/or client representative in attendance to receive on-stage recognition at the Gala.

All Grand and Honor Award winners will be required to resubmit their 30"x 30" display panel on a foam core board.

Every year, ACEC's EEA Gala provides firms with national recognition and a venue to showcase their talent and expertise in a dramatic setting. The annual black-tie EEA Gala—to be held on **Tuesday**, **April 28**, 2020—celebrates, with pride and elegance the most outstanding project achievements of the engineering profession.

All National Recognition Award Winners will be showcased during the EEA Gala awards program.





#### **ELIGIBILITY**

Any engineering or surveying firm is eligible to enter the awards program, regardless of whether the firm is a member of ACEC.

#### **GENERAL CRITERIA**

1 Both member and non-member firm entries must be submitted to the ACEC national competition through an ACEC state MO.

2 Each entry should be submitted to the state MO in accordance with local entry rules. Contact your state ACEC MO office for details. Entries submitted to the ACEC national competition must be electronically submitted in accordance with the rules and requirements outlined in this brochure.

Beach state MO may submit 10 entries from its membership, plus one member entry for every five, above 10 that were submitted. A state MO may submit any non-member entries judged to be legitimate candidates for entry in the national competition. Such non-member submittals will

count against the member submittal limitations outlined here.

4 Engineering or surveying projects that have won awards in other state or national organizations' programs are welcome in the ACEC EEA competition.

5 Projects entered in the competition may have been executed anywhere in the world. Studies and Research (Category A) or Surveying and Mapping projects (Category D) must have been publicly disclosed by the client between Nov. 1, 2017 and Oct. 31, 2019. Construction of projects (Categories B through L with the exception of D) must have been ready for use between Nov. 1, 2017 and Oct. 31, 2019.

See "Categories" section for the full listing of all eligible categories.

6 Entries in the national competition may be placed in any one of the 12 categories. The entering firm must select the one category that is most appropriate. A project may be entered only once in any category. However, after a project entered in Category A

has been constructed, it may be entered in a different category – B through L – in the year when eligible.

- **7** Each entry must consist of three components:
- Official electronic entry
- USB flash drive containing submission materials
- Photographic display panel

Non-compliance with the rules may disqualify an entry. Please read the requirements thoroughly.

Note: See "Preparing Your Entry" for the Engineering Excellence Awards.

ACEC will not be responsible for any damages to or loss of an entrant's official electronic entry, USB flash drive or photographic display panel.

The ACEC Engineering Excellence Awards committee reserves the right to determine, and change if necessary, the eligibility and category classification of any entry.



#### JUDGING

Entries will be judged on the basis of:

- Overall engineering excellence
- The work performed by the entering firm only
- The rating guidelines listed

Winners and affiliated state MOs will be notified shortly after judging is completed.

#### **AWARDS**

All submissions are considered National Recognition Award Winners. The panel of judges will select 36 awards at their discretion - 16 Grand and 20 Honor Awards, A Grand Conceptor Award will be selected from the 16 Grand Award winners. The Grand Conceptor will be announced at the Gala as the top national winner selected by the judges, whose decisions on all awards are final. Awards will be presented to the clients/ owners and entering firms submitting the winning entries.

#### **PUBLICITY**

The public relations and marketing value of participation in the national EEA program is substantial. All national winners will be highlighted in ACEC's public relations program, which benefits all U.S. engineering firms. Working with participating firms and state MOs, ACEC staff will contact local media to announce winners and their awards. Through national and state efforts, display panels can be exhibited in such public venues as city and state administrative buildings, universities, shopping centers and office buildings. These activities enhance direct business development benefits for both local and national award winners. Further benefits are gained through feature stories presented in firm brochures, newsletters and other publications.

#### RATING GUIDELINES FOR JUDGING

Each entrant's contribution will be evaluated based on the following five categories, which are key elements of the project description text required in the electronic submittal described below.

- Uniqueness and/or innovative applications of new or existing techniques
- Future value to the engineering profession and enhanced public awareness/enthusiasm of the role of engineering
- Social, economic and sustainable development considerations
- 4. Complexity
- Successful fulfillment of client/owner needs

#### RATING GUIDELINE DEFINITIONS

- 1. Uniqueness and/or Innovative Applications of New or **Existing Techniques:**
- Does the entrant's contribution to the project demonstrate the use of a new science or a breakthrough in the general knowledge of engineering?
- Does the entrant's contribution to the project represent a unique application of new or existing technology, techniques, materials or equipment?
- 2. Future Value to the Engineering Profession and Enhanced Public Awareness/Enthusiasm of the role of engineering:
- Will the entrant's contribution to the project redefine current engineering thinking?
- Does the entrant's project increase public awareness/ enthusiasm about the role of engineering in their everyday
- 3. Social, Economic and Sustainable Development Considerations:
- Do the solutions identified produce secondary benefits of value to the community environment?

#### **CALL FOR ENTRIES - CATEGORIES**

#### **CATEGORY A:**

#### Studies, Research and **Consulting Engineering** Services

Non-design services, projects not involving the preparation of construction documents consisting of but not limited to the following types of projects:

- New products, materials and technologies
- Expert testimony Basic research and studies
- Computer/software technology
- Technical papers Public outreach/ involvement
- Water conservation Security plans

- economic/risk

### Value engineering

# **CATEGORY B:**

**Building/Technology Systems** 

- Mechanical/electrical/ plumbing
- Computer/technology
- Communications
- Acoustics Software systems
- Sustainability or carbon neutrality
- Efficiency certification standards, e.g. LEED®
- Energy efficiency new and retrofit
- Secure facilities (military/ research/correctional)

# Project feasibility studies/ CATEGORY C:

#### Structural Systems

- **Foundations**
- Tunnels
- Buildings Seismic design
- Towers
- Bridges
- Stadiums

#### CATEGORY D: Surveying and Mapping

- **Technology** Geometrics ALTA land
- title and rights surveys Control, GPS, monitoring or construction surveying
- Survey mapping, GIS/LIS, photogrammetry

# CATEGORY E:

#### **Environmental**

- Hazardous waste
- Solid waste Restoration/reclamation/ remediation
- Air quality
- Noise
- Recycling
- Waste pond management
- Carbon sequestration and trading
- Mitigation

#### **CATEGORY F:**

#### Waste and Storm Water

- Wastewater collection/
- treatment and disposal Residuals management
- and reuse Graywater systems
- CS0s Mine tailings
- Agricultural
- Storm water management
- Erosion control

#### **CATEGORY G:** Water Resources

#### Hydraulics, hydrology

- Surface and groundwater supply development
- Treatment
- Transmission, distribution & storage
- Watershed management Water use reduction
- Flood risk management
- Climate adaptation
- Coastal and eco-system restoration
- Locks/dams/water control structures
- Irrigation



- Does the entrant's approach provide society with social, economic, or sustainable development benefits?
- Does the entrant's contribution to the project improve the health, safety or welfare of the public or affected environment?
- 4. Complexity:
- Did the entrant's efforts successfully address highly complex criteria or unique problems?
- Were extraordinary problems of site, location, hazardous conditions, project requirements, or similar elements present?
- Did the entrant's solutions require the use of out-of-theordinary technology or ingenuity for achievement of the project's goals?
- 5. Successful Fulfillment of Client/Owner Needs:
- Did the entrant successfully engage the client/owner in the overall project development process?
- Did the entrant introduce an economical and costeffective solution?
- How did the final cost compare to the original budget estimate?
- How closely does the entrant's solution meet the total goals of the client/owner?
- Did the entrant meet the client's time schedule?

#### PREPARING YOUR ENTRY

This section describes all required submission materials for entering the 2020 ACEC EEA competition. All materials must be submitted exactly as designated below. Digital files must be PC compatible and appropriate to the information being submitted (i.e., Microsoft Word for text, high resolution JPEGs, photos or other images, PowerPoint, Adobe PDFs, etc.).

If the submission does not meet the requirements listed, it may be disqualified.

If any part of an entry does not meet requirements listed, that portion of the entry may not be presented for judging. Please follow the guidelines.

No reference to other awards is permitted in your submitted materials.

In any given year, an entry may be submitted through only one state MO. If a project was entered in more than one MO competition, *it is the responsibility of the affected MOs* to decide which one will enter the project in the national competition.

#### DATES TO REMEMBER

January 3, 2020 — Submitted materials MUST BE RECEIVED by ACEC. Materials received after that date will NOT be accepted. All materials submitted for judging in the national competition become the property of ACEC and may be used in ACEC publications. Panels may be used for displays or other promotional or educational purposes. Submitted materials will NOT be returned.

**January 16, 2020** — The entrant's company representative, as listed on the entry form, must be available by phone.

February 7-9, 2020 — Judging takes place in Washington, D.C.

**April 28, 2020** — EEA Dinner and Gala Awards Program in Washington, D.C.

#### SUBMISSION REQUIREMENTS

The following three main components must be submitted with the national EEA competition entry:

- I. Official electronic entry
- II. USB flash drive containing submission materials
- III. Photographic display panel

\*\*NOTE: No QR Codes or embedded links are permitted in any portion of an award submission\*\*

#### **CATEGORY H:**

#### Transportation

- Highways
- Rail
- Airports
- Marine/ports
- Public transit
- Intermodal facilities

#### **CATEGORY I:**

#### **Special Projects**

- Safety and security
- Corrosion protection/cathodic protection
- Program and construction management
- Land development
- Trenchless technologies/ directional boring
- Recreational facilities
- Subsurface engineering

#### **CATEGORY J:**

#### Small Projects

■ Total project construction budget does not exceed \$2.5 million. At the entrant's discretion, except for entries in Category A, projects under \$2.5 million are not limited to this category

#### **CATEGORY K:**

#### Energy

- Transmission and distribution
- Power generation
- Renewable energyCogeneration
- Energy storage technologies
- Energy usage reduction programs
- Demand side management

#### CATEGORY L:

Industrial and Manufacturing Processes and Facilities

- Petrochemical
- Petrochem ■ Biotech
- Manufacturing
- Heavy industry
- Industrial waste
- Materials handlingMining, metallurgy, mineralogy



#### I. OFFICIAL ELECTRONIC ENTRY

All project information shall be submitted electronically. Each document must be uploaded separately through ACEC's Awards Submittal Portal. The electronic entry must contain all of the following items:

1 ELECTRONIC PROJECT SUBMISSION FORM Located on the ACEC website — http://www.acec.org/eea2020/. Once the entrant has completed the project submission form, the form can be printed so it can be signed by all required parties. This form can then be uploaded as part of the electronic project submission. Specifications: PDF format.

NOTE: You must submit entry fee payment with the electronic Project Submission Form. (\$1,200 for ACEC members; \$3,600 for non-ACEC members.) All payments must be made online. Refer to your MO for state competition fees.

Original completed entry form must be signed by both the entrant and the client/owner (senior executives/officials), stating that the submitted project was ready for use between Nov. 1, 2017 and Oct. 31, 2019. Electronic signatures are accepted.

The following project information must be uploaded individually and included with your Engineering Excellence Awards submittal.

**2** CLIENT/OWNER LETTER (one page max.) Letter addressed to ACEC National describing the relationship of the client/owner and entrant in the development of the project, the project is ready to use, and how the entrant's contribution exceeded the client/owner's needs. Specifications: PDF format.

**3** EXECUTIVE SUMMARY (one page max.) Overview of project. Describe the problem and solution. Project title and entry category must appear at the top of the page. Specifications: 8.5" x 11"; 1" side margins; single-spaced text; 12 pt. minimum size font; PDF format.

4 PROJECT DESCRIPTION (six pages max.) Tell the story of the project. Address items a, b, c, and d as listed below. Project title, entry category, and page number must appear at the top of each page. Entrants may use text, photos, graphics, or charts as needed. Specifications: 8.5" x 11"; 1" side margins; single-spaced text; 12 pt. minimum size font; PDF format.

Text must include the following:

- a. ROLE OF ENTRANT'S FIRM in the project.
- b. ROLE OF OTHER CONSULTANTS participating in the project.
- c. ENTRANT'S CONTRIBUTION TO THE PROJECT: A brief description of the entrant's contribution addressing each of the following Rating Guidelines (refer to "Rating Guideline Definitions" on pages 4 and 5 for detailed rating and judging information):

- Uniqueness and/or innovative application of new or existing techniques.
- Future value to the engineering profession and enhanced public awareness/enthusiasm of the role of engineering.
- Social, economic, and sustainable development considerations.
- Complexity.
- Successful fulfillment of client/owner needs.

Include total project budgeted cost, total project actual cost, entrant's portion of the budgeted cost, entrant's portion of the actual cost, and scheduled and actual dates of completion (as indicated on the Electronic Project Submission Form).

d. **SUMMARY:** Describe in layman's terms why this project is worthy of special recognition (word count between 100 - 500 words). Explain all factors that exhibit the project's uniqueness and complexity, such as innovative engineering, challenges faced and overall social impact. **NOTE:** This summary will provide the basis for all ACEC publicity on the project.

#### KEY PARTICIPANTS

List the key participants on the project including firm name, address, phone number, website, and e-mail address of each participant. Include contractors, subcontractors, other engineers, architects and designers significantly involved in the project. *Specifications:* 8.5" x 11"; PDF format.

#### PHOTOS OR GRAPHICS

Six different photos or graphics (one per page) with captions describing the subject matter (refer to "*Image Guidelines*" below). Captions shall begin with: Photo 1, Photo 2, etc. *Specifications*: JPEG file; RGB format; High Resolution (300 dpi).

Photo Captions: Once photos are uploaded, type in the captions in the small box under each photo on the online submittal site.

USB: Provide six captions in a Word format.

#### Image Guidelines:

Because the images will be projected on a large screen during the EEA gala, it is very important to submit sharp, high-quality, high-resolution images.

Three of the photographs must show the completed project and provide the highest level of visual impact for publicity. Three of the photographs must display the planning, startup, and/or construction phases of the project.

#### 7 PHOTOGRAPHIC DISPLAY PANEL

Small-size copy of the photographic display panel.

Specifications: JPEG file; RGB format; High Resolution (300 dpi).

#### MEDIA LIST

E-mail addresses of local newspapers, TV, radio stations and other media outlets where your project can be highlighted. If the state MO or entrant prefers to handle all local and national publicity for the project, include a statement to that effect. Specifications: Excel file; 8.5" x 11" or 11" x 17".



PRESS RELEASE (two pages max.)
Press release that clearly and concisely describes the project and the entrant's participation, based on information presented in the Project Description. Also describe the value of the project to the community including information such as the number of people served, cost savings, etc. Do not reference other awards the project has won. Specifications: double-spaced; 8.5" x 11"; PDF format.

POWERPOINT PRESENTATION
PowerPoint file, containing 8 slides including a title slide with ACEC and EEA logos, firm name, project name, project location: city and state, followed by 6 slides that include images 1 through 6 (same images as Item 6 above), plus the last slide that contains the photographic display panel. This presentation will be used by the judges as part of their evaluation. Do not include sound, transition effects, animation, preset timing, or slide show sequencing. A sample PowerPoint presentation is downloadable from the ACEC website.

1 SUPPLEMENTARY REPORT Include a supplementary report containing the findings portrayed with text, graphs, or photos, as needed.

**NOTE:** This report is **ONLY** required for Category A submittals.

#### II. USB FLASH DRIVE

USB Contents & Specifications: One USB flash drive (to be sent to ACEC with Photographic Display Panel). Include labels on USB and Photographic Display Panel with firm name, project name and category. Test the USB flash drive on different computers to ensure that it is not machine-dependent.

Include each of the following items in the file type indicated, in the order given, and with the titles shown:

- 01 Electronic Project Submission Form
- 02 Client/Owner Letter
- 03 Executive Summary
- 04 Project Description
- 05 Key Participants
- 06 Six Photos or Graphics

(Photo Captions: Type separately in a Word document)

- 07 Photographic Display Panel
- 08 Media List; Excel File
- 09 Press Release
- 10 PowerPoint Presentation
- 11 Supplemental Report

#### III. PHOTOGRAPHIC DISPLAY PANEL

Panel text and photos should demonstrate the challenges, solutions, innovation, complexity and unique aspects of key

project elements. The panel should be prepared with highquality photos and graphics with minimal text.

#### Photographic panel requirements:

- 1. PANEL SIZE: 30" x 30" square, with a matte finish, laminated front and back as follows:
  - a. Front lamination thickness: 5 mil
  - b. Back lamination thickness: 5 mil
  - c. Panel stock thickness before lamination: no more than 5-6 mil
  - d. Total panel (with lamination) thickness: 15-16 mil NOTE: Framed or mounted panels will NOT be accepted.
- 2. VELCRO ATTACHMENTS: Four, 9-inch long strips of Velcro (the hook side only) must be placed vertically on the back, near each corner of the panel.
- **3. PHOTOS/GRAPHICS:** Maximum of 6 photos and/ or graphics shall be used on the panel. Each image shall be a minimum of 7" x 5" or 35 square inches in area. A background photo is not considered a photograph.
- **4. TEXT/FONTS:** Panel text may not exceed 250 words total, not including captions. Font sizes: 32 pt. minimum font for text or descriptions; 28 pt. minimum font for captions and graphics.
- 5. REQUIRED ELEMENTS: The front of the panel shall also include the ACEC and EEA logos (download from ACEC website), title and location of the project or study, client/owner's name and location, and entering firm's name and location (minimum 32 pt. font size).
- 6. CORNER SPACE: Leave a 2"x 2" space in the upper right-hand corner of the panel that is free of text or images. Do not leave the "blank" space as a white square; the background scheme should continue, but will be partially covered by the review committee's coding label.
- BACK OF PANEL LABEL: Add a label to the back of the panel with the name of the entrant's firm, the firm address, the project name, and the entry category.

**NOTE:** If production/printing services for your photographic display panel are not available in your community, contact Daisy Nappier at ACEC for sources.

#### SHIPPING

Photographic display panels must be rolled and shipped in mailing tubes.

All materials including the electronic submission must be received by January 3, 2020.

Ship USB flash drive and Photographic display panel to:

American Council of Engineering Companies Attn: Daisy Nappier 1015 15th Street, NW, 8th Floor Washington, D.C. 20005-2605



# **OFFICIAL ENTRY FORM**

E-mail

Furnish all information requested below for each entry (signatures by the submitting firm(s) and the client(s)/owner(s) are required). Firm, project, and client/owner's name should be typed or printed as they are to appear on the award. Please limit the project name to 45 characters.

A fee of \$1,200 per entry for ACEC members (\$3,600 for non-ACEC members). All payments must be submitted online. Online Payment Method: Visa, Master Card, American Express or Discover.

Visa, Master Card, American Express or Discover.				
ABOUT THE PROJECT				
Project Name			(limit to	o 45 characters)
Judge this entry in the following category (check one):				
□ A. Studies, Research, and Consulting Engineering Services Mapp     □ B. Building/Technology Systems □ E. Envir □ C. Structural Systems □ F. Waste  Project Location: City □ I. S. Constraints I. R. Grand State	eying and oing Technology onmental e and Storm Water	☐ G. Water Resourc ☐ H. Transportation ☐ I. Special Project ☐ J. Small Projects	ces	cturing Processes
Project Location: City U.S. Congressional Representative's name in district wh		State		
U.S. Congressional Representative's name in district wh	ere entering firm is lo	ocated		
U.S. Congressional Representative's name in district wh				
What state/MO (member organization) is sponsoring th	is submission?			
What was the Entrant's Role in the project?				
ABOUT THE PROJECT'S SCHEDULE				
Budgeted and/or actual costs may not apply to some studies		=	D.	
With the exception of Category A and some Category D pr <b>fees.</b> If your firm was responsible for the entire engineering and the <i>Entrant's Portion of the Total Construction Actual Cos</i> Construction Actual Cost amount.	ojects, costs reflected design of the project, to amount will be the se	below are always constr then the Entrant's Portion ame as the Total Constru	ruction costs and are n of the Total Construct action Budget amount	tion Budget amount and Total
If your firm was not responsible for the entire engineering-d and the Entrant's Portion of the Total Construction Actual Cos for. (i.e. a mechanical engineering firm was responsible for Construction Budget. \$40M is the Total Construction Budget.)	st amount should be th \$12M of a total Constr	e part of total project con ruction budget of \$40M.	nstruction cost your f \$12M is the Entrant's	irm was responsible
Completion/Use Dates: Scheduled	Act	ualual \$		
Category A & D Costs: Budgeted \$	Act	.al \$		
Construction Costs: Total Construction Budget \$	lota	al Construction Actual		
Entrant's portion of Total Construction Budget \$	Entr	ant's portion of Total C	Construction Actual	\$
☐ Check box if project was awarded through QBS proce				
ABOUT THE FIRM(S) SUBMITTING 1	THE PROJECT			
Entering Firm(s)				
Firm CEO				
Firm Representative	2020 (-111	-:11:1 1 1- :f al-	11	1.1525 1
Must be available by phone on Thursday, January 16, information required for your submittal).  Address (no P.O. Box)				
Address (no P.O. Box)	C	Lity	State	Zip
Phone () Cell (		Fax (_	)	
E-mail				
I hereby authorize submission of this project into the Ar Awards competition.				
Senior Executive/Principal	T	itle		
Signature		Date		
Address (no P.O. Box)	C	City	State	Zip
Phone ()	Fa	x ()		
E-mail				
ABOUT THE CLIENT/OWNER(S) OF	THE PROJEC	Т		
Client/Owner(s)				
I believe the work of the engineer meets the intended uses in the ACEC 2020 Engineering Excellence Awards comp innovations. I confirm that the project was ready for use b	etition, and authorize	publication of its outsta	ınding features, uniq	
Client/Owner Representative		,		
Title Sign	gnature		Date	
Address (no P.O. Box)		City	State	Zip
Phone ( )	Fa	x ( )		- F

# **EEA Judging Module**

1. Start at the ACEC website, <a href="www.acec.org">www.acec.org</a>. Click on Awards Programs and then on the Engineering Excellence Awards, which is the first dropdown menu.

You will see the following screen: click on <u>Judge Login</u>, which is directly below the picture.



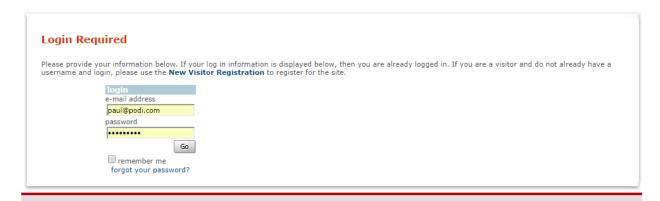
2. You will be prompted to login. If you do not know your password, click on the Forgot your password link below the login boxes and you will be sent instructions from ACEC through your email.

ABOUT | JOIN | JOBS | TRUSTS | CONTACT | HOME



# Advancing the Business of Engineering

ADVOCACY EDUCATION CALENDAR CONFERENCES PUBLICATIONS AWARDS PROGRAMS MEMBERSHIP



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3. Once you are logged in successfully, you will see the screen below, which contains the basic instructions that you will need to know to score applications.

ACEC's Engineering Excellence Awards (EEA)



# Advancing the Business of Engineering

# Welcome To Judges Module!

Click here to view all applications.

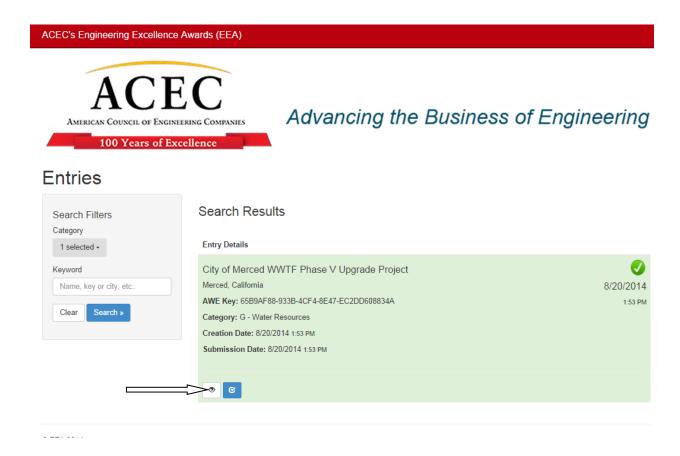
- Use the filters to select a category or search for a specific application.
- Click on to view any of the submitted documents for that application.
- Click on to score that application.

4. When you click to view the applications, you will see the screen below. You can use the filters on the left side to select a category for judging. You can also use the other search prompts if you are looking for a specific application.



Once you see the list of applications in each category, you can either view or score each specific application.

5. To view the details of the application, click on the white icon as shown below:



Click on any of the links in the right column to view the document that was submitted in support of the application.

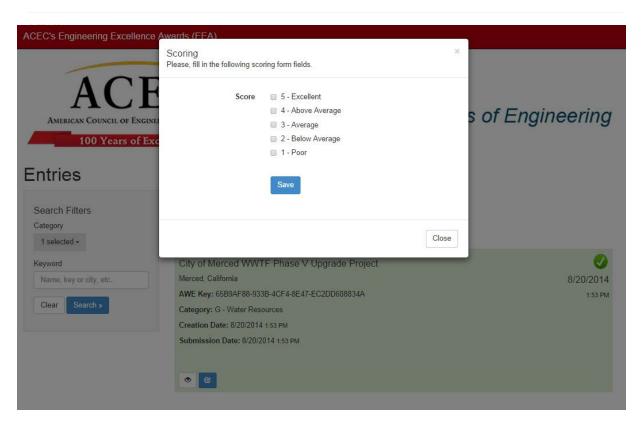


# City of Merced WWTF Phase V Upgrade Project

Fields marked with * are required whe	en submitting the application.	
A. Signed Official Entry Form	<ul><li>Form should be signed.</li><li>Accepted file format is PDF only.</li></ul>	01_entry_form.pdf
B. Client/Owner Letter	<ul><li>Accepted file format is PDF only.</li><li>Upload up to two files.</li></ul>	Client Letter.pdf
C. Executive Summary	Accepted file format is PDF only.     One page only.	Executive Summary.pdf
D. Project Description	<ul><li>Accepted file format is PDF only.</li><li>Up to five pages.</li></ul>	Project Description.pdf
E. Electronic Version of 30x30 photographic display panel	Accepted file formats are JPE, JPG and JPEG.	Photographic Display Panel jpg

6. To score the application, click on the blue icon as shown below. A window will open allowing you to submit your score for the application.





7. When finished with the scoring of a specific application, simply return to the main screen and choose to view or score another application.

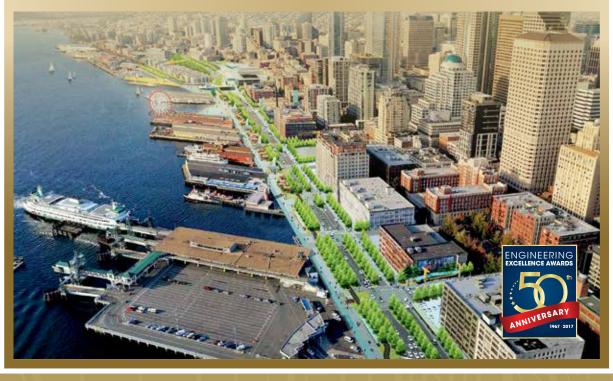


# ACEC

American Council of Engineering Companies

# ENGINEERING EXCELLENCE AWARDS

# 2019 WINNERS





# ENGINEERING EXCELLENCE AWARDS

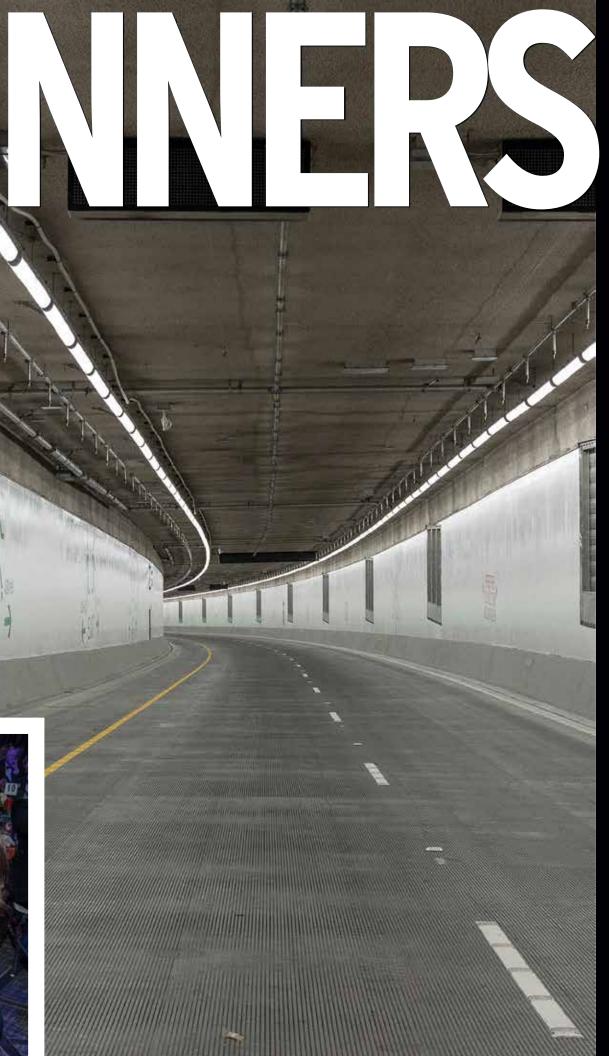
he 2019 Engineering Excellence Awards Gala—known as the Academy Awards of the engineering industry—showcased 196 projects from across the country and throughout the world at a black-tie event on May 7.

A panel of 28 judges representing a wide spectrum of built environment disciplines had selected 36 top winners—including 20 Honor Awards, 16 Grand Awards and a Grand Conceptor Award for the year's most outstanding engineering achievement.

Ross Shafer, a six-time Emmy Award-winning comedian, TV host and nationally recognized motivational speaker, returned to again host the Gala, which was attended by nearly 800 members, guests and dignitaries.







## 2019 Grand Conceptor Award

Alaskan Way Viaduct Replacement Seattle, Washington

**WSP USA** Seattle, Washington

One of Seattle's most seismically vulnerable highways has been replaced with a 1.7-mile underground tunnel containing a state-ofthe-art double-deck highway. Situated 200 feet beneath downtown, the new tunnel has a revolutionary flexible concrete core that combines with its underground location to make it withstand a 9.0 magnitude earthquake. Pioneering ventilation and fire control systems also make the tunnel one of the safest structures of its type in the world. The project eliminates a half-century-old barrier separating downtown from its waterfront, while paving the way for 9 new acres of publicfriendly space.



#### Governor Mario M. Cuomo Bridge

Tarrytown, New York

**HDR** 

New York, New York

The massive new 3.1-mile state-of-the-art, twin span Governor Mario M. Cuomo Bridge across the Hudson River reduces traffic congestion and frustration for motorists with eight new general traffic lanes, shoulders and bus lanes and a state-of-the-art traffic monitoring system. The \$3.2 billion structure is also designed to accommodate future commuter rail. Innovative roadway lighting uses dark-sky compliant LED light fixtures to reduce light pollution. The highly efficient system requires 75 percent less energy compared with traditional bridge-lighting technology. As the largest bridge in New York State history, the project involved 1,400 companies, created thousands of jobs and used 220 million pounds of U.S.-made steel.

#### **VMI Corps Physical Training Facility** Lexington, Virginia

**WSP USA** 

Arlington, Virginia

Cutting-edge building systems highlight the gleaming new 205,000-square-foot facility for recruit training, track and field competitions and other corps activities. Innovative technologies include a "passive downdraft" heating and cooling system, which uses evaporative cooling and buoyancy to supply outside air to the interior without the use of fans, cutting energy costs by nearly half. Air is induced into the building's four supply airshafts by cooling outside air with a chilled water spray application at the top of a vertical column. Underground cisterns collect rainwater from the roof, providing a renewable water source for irrigation, flush toilets and mechanical system rehydration. In use for over a year, the facility has exceeded expectations in both energy savings and user experience.







# Lake Peachtree Spillway Replacement

Peachtree City, Georgia

**Schnabel Engineering** Alpharetta, Georgia

Innovative design has provided more spillway capacity at the Lake Peachtree Dam while setting a new benchmark for hydraulic design in the U.S. The replacement structure, called a multistaged nonlinear Piano Key Weir, has a unique nonlinear geometry that provides significant higher water capacity in constrained spaces compared with more conventional weirs, yet with lower construction costs and maintenance. The first known application of a multistage Piano Key Weir in the world, the Lake Peachtree project features a new golf cart bridge that offers a vantage point for visitors to admire the new spillway to further enhance Lake Peachtree's status as a community centerpiece.





**Arup** 

New York, New York

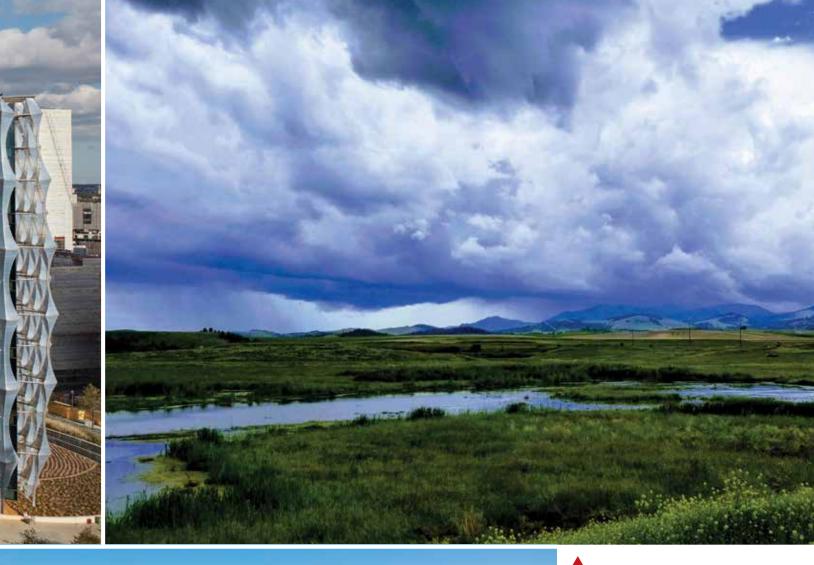
The new U.S. Embassy in London replaces an outdated structure with a modern, welcoming, secure facility featuring state-of-the-art energy efficiency. The design includes a visually appealing structurally glazed facade that screens solar gain while ensuring a uniform distribution of daylight to the building interior. Also included are a sophisticated water conservation system, high optimization of daylighting and occupant control systems and a network of photovoltaic panels that generate on-site electricity. Embassy visitors seeking passports and visas now take advantage of much larger waiting rooms, privacy booths, comfortable seating and a beautiful view of the Thames River.

#### Linking Lookout: U.S. 6th and 19th Street Interchange Golden, Colorado

**Muller Engineering Company** Lakewood, Colorado

Colorado's first "lid" interchange ends decadeslong safety nightmares for pedestrians seeking to cross U.S. Route 6 amid heavy traffic. After the previous intersection could no longer accommodate the growing multimodal mix of crossing traffic, the project team incorporated an innovative cut and cover lid feature over the lowered highway. The new covered highway, berms and reduced vehicular speeds have since significantly cut noise and emissions from pre-project conditions. The interchange improves safety, and features structural aesthetics and park amenities, which echo the feel of the nearby mountains.







#### Prickly Pear Creek Realignment East Helena, Montana

**Pioneer Technical Services** Helena, Montana

Resourceful engineering eradicated a toxic threat to groundwater by realigning a natural stream away from the contamination danger. For more than a century, ore processing at a nearby smelter had sent tons of slag and waste products into the Prickly Pear Creek floodplain, causing widespread contamination and major threats to the groundwater. To restore the area's environmental health, the project team removed a nearby dam and lake complex replacing it with a "natural" stream channel that diverts the creek away from a contaminated slag pile. Groundwater levels below the most contaminated soils were permanently lowered, which reduced the extent and magnitude of the groundwater plumes, restored fish passage through the site and reestablished more than 140 acres of wetlands.





#### **Infinity Loop** Portland, Oregon

#### **HDR**

Portland, Oregon

A decades-old dilemma regarding how to load and unload freight trains at a higher rate without affecting freight traffic has been solved and cuts processing time in half. While present unit-train loop tracks can accommodate a single unit train, they cannot efficiently process multiple trains at high rates. The new design wraps outer loop staging tracks, each capable of holding one train, around an interior balloon track. This space-saving layout creates an "infinity" symbol, which allows multiple trains to enter the facility and be loaded or unloaded in quicker succession without conflicting with other trains.



#### **Crooked River Wetlands** Prineville, Oregon

**Anderson Perry & Associates** La Grande, Oregon

Constructed for a fraction of the cost of a conventional wastewater treatment facility, the groundbreaking wetlands complex uses natural processes to remove contaminants from reclaimed water. The system provides as much as 2 million gallons per day of clean, cool water that will aid in the reintroduction of steelhead and salmon, as well as offering habitat for numerous plants, wildlife, waterfowl and insects that support a healthy ecosystem. Plant microorganisms in the wetland polish the water, which is cooled as it flows underground into the Crooked River. Since its installation, the system has exceeded stringent permit requirements and has helped pioneer a new, nontraditional approach to address wastewater treatment needs.







#### San Pedro Creek Culture Park San Antonio, Texas

### **HDR/Pape-Dawson Engineers**San Antonio, Texas

Visionary design revitalized a once sacred creek with inspired art, splendid paseos, native plantings and unique plazas—to create an attractive area of respite and cultural reflection. The project team replaced the original concrete streambed with cobble and natural materials to further enhance aquatic habitat and restore the ecosystem that once propagated the creek. State-of-the-art crest gates at a downstream dam control the creek's water surface area and depth. An automated submersible pump speeds the flow of water through the area following major storms to minimize flooding. The resulting creek restoration has also fueled a development renaissance in downtown San Antonio.



#### **Zoo Interchange Core and Adjacent Arterials** Milwaukee, Wauwatosa and

West Allis, Wisconsin

#### Forward 45

Milwaukee, Wisconsin

The new multimodal intersection is the result of a six-year effort to assure Wisconsin's busiest interchange can effectively handle 21st century mobility demands. The previous intersection had become deteriorated and could no longer accommodate the 350,000 vehicles per day that pass through the interchange. The new design includes 9 miles of freeway and 4 miles of local roads, in addition to pedestrian, transit, car-pooling and bicycle facilities making it the largest multimodal project in the state's history. Critical to the project's success was maintaining access to a major regional medical center, which serves 1 million patients annually, employs 14,000 and serves as the region's only Level 1 trauma center.





Sarah Mildred Long Bridge Portsmouth, New Hampshire

Hardesty & Hanover/ FIGG Bridge Engineers New York, New York

The new lift bridge creates a more direct passage for large vessels accessing the nearby port and Portsmouth Naval Yard. The project overcame the challenging Piscataqua River, featuring tidal flows among the highest velocities in the U.S. The design incorporates precast posttensioned segmental concrete towers, the first such use for a lift bridge. While retaining the twolevel concept of the previous structure's approach spans, the center lift span now features rail and roadway on the same level with tracks embedded into the median. The new single-level lift span increases vertical clearance above the river to 56 feet and reduces the number of required bridge openings by more than two-thirds.



#### MIT.nano

Cambridge, Massachusetts

#### **BR+A Consulting Engineers**

Boston, Massachusetts

Groundbreaking engineering has created the nation's largest, most efficient and sophisticated nanotechnology research facility. The 214,000-square-foot building replaces a previous 30-year-old complex that could not support future nano-scale fabrication and imaging research. The new facility houses chemistry and prototyping labs, a two-story virtual-reality and visualization area, an ultra-stable basement level dedicated to electron microscopes and other sensitive imaging tools and two large floors of connected cleanroom spaces. The new facility will support more than 2,000 faculty and researchers every year.



#### **Times Square Shuttle Station Reconstruction Study**

New York, New York

**WSP USA** 

New York, New York

Imaginative planning research has produced a solution to renovate one of New York City's largest and most congested subway stations. The Times Square Shuttle Station in Manhattan serves over 200,000 passengers daily, but its configuration has long been known to create passenger confusion and congestion, while its curved track alignment results in large platform gaps that preclude this key station from being Americans with Disabilities Act (ADA) compliant. The project team proposed reconfiguring the station to include expanding the station 350 feet further into the existing rail tunnels. It also includes construction of a new 28-foot-wide center platform that provides full access to all riders and the removal of 122 columns along platform edges. The proposed modifications would help the station meet growing passenger demand while dramatically improving service and providing ADA access.





# Salesforce Tower San Francisco, California

#### Magnusson Klemencic Associates

Seattle, Washington

At 1,070-feet tall, the Salesforce Tower is a structural marvel in having the highest occupied floor of any building in a seismic zone in the Western Hemisphere. It is the tallest building in the world to use only its central core to resist wind and earthquake forces, even though it resides in one of the most volatile seismic hazard locations. All elevators, emergency stairs, restrooms and mechanical systems are encased in a core of high-strength concrete, creating an extremely strong structural spine. The project team's structural design allows for fewer exterior columns to carry the weight of floors to the foundation. Already a commercial success, the new tower will enhance the San Francisco skyline for generations to come.



#### **Enhanced Nutrient Recovery Upgrades**

Baltimore, Maryland

#### **Whitman Requardt and Associates**

Baltimore, Maryland

One of the world's largest applications of denitrification technology has substantially lowered levels of nitrogen and phosphorous discharged into the Chesapeake Bay. The process involved integration of 52 specially designed denitrification filter cells—among the world's largest—into the existing Back River Water Resource Recovery Plant. Results show the technology reduced the nitrogen and phosphorus load discharged to the Chesapeake Bay by nearly 2 million pounds in the first year of operation. The restoration effort provides an integrated approach to improving water quality in the Chesapeake Bay watershed.



#### **Barrington Road at** I-90 Interchange & Park-n-Ride

Hoffman Estates, Illinois

Crawford, Murphy & Tilly Aurora, Illinois

Expansion of the Illinois Tollway combined with a dedicated transit component and express bus service created a full access, multimodal interchange. Complementing the multimodal hub is a direct connection with an adjacent 170-space Park-n-Ride Lot, in addition to sidewalks and paths to facilitate accessibility by both pedestrians and cyclists. Coinciding with the ongoing widening of I-90, the interchange eliminates a local traffic choke point and reduces emergency response times to nearby St. Alexius Hospital. The new interchange illustrates how transit and other alternative modes of transportation can be effectively integrated to enhance mobility for all.



#### The Promenade of Wayzata Wayzata, Minnesota

LHB/American Engineering and Testing/ Ericksen Roed and Associates/KFI Engineers Duluth, Minnesota

A declining '60s-era mall built over a native wetland has been replaced with a striking new 1.5-million-square-foot mixed-use community that features six distinctive blocks including senior living facilities, apartments, retail, offices, restaurants and a hotel as well as a large community park. Long-term foundation concerns due to a thick underlying swamp and shallow water table were overcome using a cutting-edge "land bridge" design with the buildings, walks, streets and utilities all supported by deep foundations, many of which provide double-duty as "energy piles" that use geothermal energy for heating. The result is a massive network of heated streets and walks, which virtually eliminate cold-season salt use at the site.





#### Fred & Pamela Buffett Cancer Center

Omaha, Nebraska

**HDR** 

Omaha, Nebraska

The dazzling \$323 million center is highlighted by a 10-story, 98-laboratory research tower in addition to an eight-story, 108-bed inpatient treatment center. The project team overcame site constraints to creatively design building infrastructure that meets stringent energy efficiency mandates while still optimizing operational efficiency, quality of care and patient experience. Additional innovations include highefficiency boilers that will save nearly \$1 million in energy costs, a centralized uninterruptible power supply, and a distributed networkbased lighting control system that adjusts illumination levels according to occupancy, time scheduling and daylight harvesting.

#### V

# Minnesota 210 Design-Build Flood Repair

Carlton, Minnesota

#### **Barr Engineering Company** Minneapolis, Minnesota

A scenic section of Highway 210 is once again being enjoyed by travelers after historic rainfall in 2012 caused major slope failures and extensive roadway damage. The project team restored 74 slopes along a 3.5-mile stretch of the highway while overcoming steep terrain accommodating the area's unique geologic and groundwater characteristics. Innovative measures and vegetation were used to conceal many slope repairs to reclaim the route's natural appearance. Monitoring instrumentation invented specifically for the project provides real-time erosion analysis while advancing the practice of slope monitoring in remote project locations.







#### Swan Lake Reservoir Expansion Project

North of Ketchikan, Alaska

#### McMillen Jacobs Associates Boise, Idaho

Accessible only by boat, plane or helicopter, Swan Lake Reservoir's capacity was still increased allowing for more storage from spillway flows. Located in proximity to the 25-megawatt Swan Lake Hydroelectric facility—a major power provider for southeast Alaska—the reservoir capacity level was raised from a normal full pool elevation of 330 feet to 345 feet. The project's design included a 23-foot-wide vertical operating gate, a 30-foot-tall concrete pier and a 78-foot-long flashboard gate system across the spillway. The modifications significantly lower energy costs and increase energy security for power users, clients and the community.





**WSP USA** New York, New York

The eye-catching yet strikingly slender 1,050-foot-tall tower also features cuttingedge structural innovation. The pyramidal-appearing form incorporates an imaginative yet resilient structural diagrid system to support its uniquely intricate exterior. While the building's north and south facades taper at gently shifting inclines, the envelope to the east and west are vertical. The design results in the diagrids "meandering" along the facades and creates distinctive views for occupants. The complex also houses 728,000 square feet of ultraluxury residential condominium apartments with amenities such as a 65-foot-long lap pool, wellness center, wine vaults and 65,000 square feet of additional gallery space for the Museum of Modern Art.







**Aquifer Storage and Recovery Wells** 

Woodland, California

**Carollo Engineers** 

Sacramento, California

Creative engineering is helping a water-challenged city transition from sole dependence on groundwater to higher quality treated surface water from the Sacramento River. With groundwater supply challenged by stringent water quality requirements and drought conditions, the project team designed two aquifer storage and recovery wells capable of accommodating 325 million gallons of drinking water. Treated surface water is injected into the wells when demand is low, then extracted during higher demand periods. The cutting-edge process eliminates the risk of overusing wells while also improving water quality and lowering costs to residents. The project is the fastest of its type ever implemented in the U.S.





# Automated People Mover and ConRAC Tampa, Florida

Walter P Moore/Gresham Smith/ Master Consulting Engineers Tampa, Florida

Known as SkyConnect, the 1.4-mile, three-station Automated People Mover (APM) provides fast, safe and sustainable transportation for Tampa International Airport's steadily increasing passenger volume. Similarly, the 2.44-million-square-foot consolidated rental car facility (ConRAC) offers state-of-the-art rental car operations, which previously had been operating in cramped, near-capacity facilities. Effective combinations of precast and cast-in-place concrete, and structural steel solved challenges such as the APM's horizontally curving rail spans of more than 250 feet long and stations located 120 feet above existing roads. Together, the APM and ConRAC will eliminate nearly 3 million vehicle trips on airport roads and 1,600 tons of carbon emissions each year.



## Allison Creek Hydroelectric Design-Build Project Valdez, Alaska

**McMillen Jacobs Associates** 

Boise, Idaho

The new 6.7-megawatt hydroelectric facility significantly reduces Valdez's reliance on diesel fuel generators. The project team's design overcame a host of environmental, safety and public health concerns, including impact on operations at the nearby Valdez Marine Terminal, the terminus of the Alaska Pipeline System. The project includes an innovative concrete gravity dam with a penstock system that delivers water 1.25 miles to a power generation plant. Because of a 1,200-foot elevation drop in the penstock system, the design was refined to accommodate changes in water pressure. Sections of the penstock were buried to protect from freezing and avalanches and to minimize impacts to wildlife. The project reduces diesel fuel costs annually by \$2.4 million and eliminates 12,000 tons of carbon dioxide emissions.



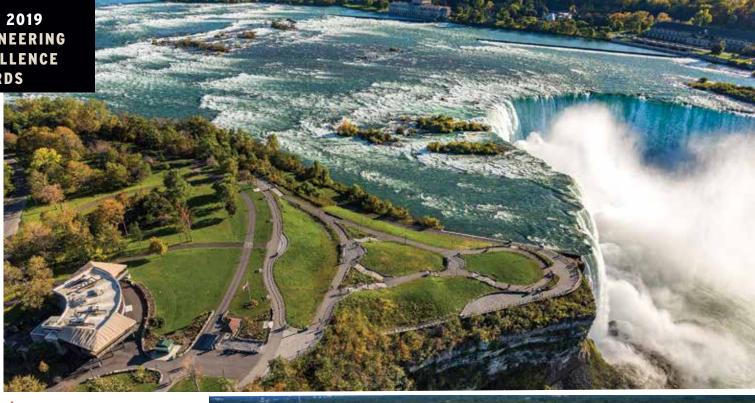
# I-70 Mountain Corridor Eastbound Express Lane Idaho Springs, Colorado

**HDR** 

Denver, Colorado

A new express lane delivers much-needed congestion relief, improves travel reliability and dramatically reduces times to clear emergencies. Located between U.S. Route 40 at Empire Junction and the Veterans Memorial Tunnels, the project required the complete overhaul of two major interchanges critical to the economic viability of Idaho Springs, with a mandate of minimal disruption to motorists. An innovative accelerated bridge design cut construction time in half on one interchange, while the second interchange required a full reconstruction but remained in use. A complete parallel bridge replacement and ramps were constructed before taking the existing interchange offline for upgrades.





#### Niagara Falls State Park **Transformation Initiative** Niagara Falls, New York

T.Y. Lin International Rochester, New York

Years of disrepair, undersized overlooks, antiquated systems and inadequate pedestrian circulation have all been remedied with a new park worthy of its international renowned name as a premier tourist attraction. Everything—attractions, infrastructure, buildings, parking facilities, lighting systems, pedestrian and vehicle circulation routes, and behind the scenes utility, mechanical, electrical, irrigation and stormwater systems—has been upgraded with state-of-the-art technology. Spanning across more than 400 acres, the \$65 million transformation initiative succeeds in improving public access and experience to the wonderment of Niagara Falls.



#### **American Center for Mobility** Ypsilanti, Michigan

WSP Michigan/HNTB Michigan/Mannik & **Smith Group/NTH Consultants** Detroit, Michigan

The new center is a first-of-its-kind nonprofit testing, education and product development center for connected and automated vehicles. An innovative slab foundation system for bridge abutments and superstructures minimized excavation needs for the 330acre center. Advanced intelligent lighting and traffic signals, along with flexible urban environment configurations, help provide researchers with unlimited options to test and validate automated vehicle system performance. The new center will play a key role in ensuring that connected and automated vehicles can be safely integrated into the nation's transportation network.



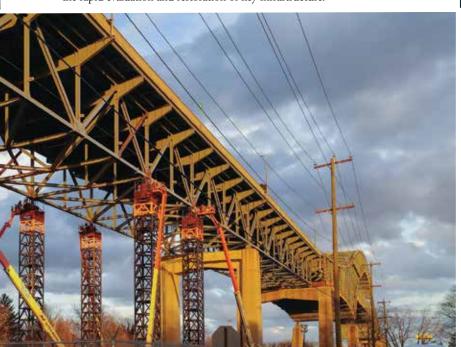


#### **Delaware River Bridge Emergency Response** Bristol, Pennsylvania

#### **Michael Baker International**

Harrisburg, Pennsylvania

The discovery in January 2017 of a full-depth fracture in a truss unit on the Delaware River Bridge's Pennsylvania approach forced an immediate closure of a critical crossing in the local and regional transportation network. Tasked with engineering a fast-track fix, the project team used innovative ultrasonic material testing to evaluate the condition of other trusses and bridge components with similar design and load characteristics. No additional problems were revealed. This innovative testing approach, the largest ever application for a steel bridge in the U.S., helped expedite repairs and certify the structure's overall safety. The bridge was reopened just under two months later and illustrates how advanced testing technology and practices can aid in the rapid evaluation and restoration of key infrastructure.



#### **eBART to Antioch: East Contra Costa Extension** Pittsburg, California

#### PGH Wong/AECOM/Ghirardelli/MNS/SAMJV Oakland, California

A new eBART extension helps bring much-needed relief to a highly congested highway corridor. The new rail service in East Contra Costa County (California) now connects Pittsburg to Antioch and eases common bottlenecks on State Route 4 (SR-4). The project included 10 miles of tracks extending east in the median of SR-4, two new stations, a parking lot and a train maintenance and operations facility. Built in conjunction with a SR-4 widening project, the combined projects represent approximately \$1 billion invested specifically in that corridor. The eBART trains meet strict emissions standards by using renewable diesel, an advanced biofuel produced from sources such as vegetable oil. Ridership on the new eBART extension is already more than double agency projections.



#### **Delaware Memorial Bridge Cable Dehumidification**

New Castle, Delaware

#### **AECOM**

Wilmington, Delaware

An innovative dehumidification system is helping preserve massive steel cables supporting the Delaware Memorial Bridge's main spans and help prevent loss of structural integrity. After corrosion on support cables was discovered on the twin 3,650-foot-long suspension bridges, the project team designed an innovative dehumidification system specifically tailored for the bridge's cables to reduce effects of relative humidity and extend component service life. This is only the second application of this technology in the U.S., although five more major U.S. suspension bridges are expected to have dehumidification systems for cables within the next few years.

**ACEC 2019 ENGINEERING EXCELLENCE AWARDS** HONORAWARDS



#### **Riverside Drive and Gathering Place** Tulsa, Oklahoma

**HNTB** Oklahoma City, Oklahoma

In preparation for a largescale, \$400 million park along the Arkansas River, the city of Tulsa first needed to overcome several infrastructure challenges, including stormwater flooding, aging water and sewer lines and safety issues with Riverside Drive. The project team incorporated an accelerated design effort that delivered numerous infrastructure upgrades, including all utility relocations and right of way acquisitions, resulting in the site being ready for construction in less than a year. Within three years, the old undeveloped floodplain had successfully morphed into land bridges, skate parks, landscaped greenways and other amenities that provide Tulsa with a new source of community pride.







#### **Murray Wet Weather Facility**

Seattle, Washington

Bellevue, Washington

Creative incorporation of a new wet weather facility has eliminated prevalent combined sewer overflows after severe weather. Major rain events had frequently overwhelmed the 60-year-old Murray Avenue Pump Station, often resulting in untreated overflows of combined storm and sanitary sewage flowing untreated into Puget Sound. The design solution featured a unique circular 1 million gallon storage tank that stores excess sewage when storm events exceed the pump station's capacity. Afterward, the stored stormwater is gradually released to the pump station to be conveyed to a treatment plant. Located on a steep slope overlooking Puget Sound, the mostly underground tank successfully blends into the surroundings.





# Westminster Station Park Westminster, Colorado

Muller Engineering Company Lakewood, Colorado

A badly neglected creek corridor has been transformed into an enticing 40-acre oasis with a shimmering pond, green play lawns, mammoth boulders and trails winding beside a flowing creek bordered with trees. The project team fulfilled the vision of local officials in creating a mountainlike open space park in an urban area while at the same time providing a hub for a 75-acre transitoriented development where a transit station, residences, businesses, entertainment and other services are all within easy walking distance. New park facilities include an arts center, amphitheater, boating pond, treehouses, multiple picnic areas and playgrounds crafted out of natural materials.



## Permanent Sheet Pile Wall, Pennsylvania Turnpike

West Deer/Indiana, Hampton Townships, Pennsylvania

#### Earth, Inc.

Pittsburgh, Pennsylvania

Resourceful engineering design has created a new sheet pile retaining wall system that results in significant cost and time savings compared with current retaining wall options. The 1,573-foot-long, permanent sheet pile retaining wall system was first used during embankment widening for the Pennsylvania Turnpike. The new wall system includes nearly 2,000 tons of steel to construct the exposed wall face and its underlying network of resistance sheets. In addition to being less costly than conventional retaining wall systems, the alternative design is also easier to build. The turnpike's entire sheet pile system was completed in six months, almost half the time for a mechanically stabilized earth retaining wall and without the need for temporary shoring.



#### Vancouver Waterfront Park Vancouver, Washington

#### **BergerABAM**

Portland, Oregon

The main jewel of a \$1 billion waterfront revitalization program, the new 7.3-acre park, replaces a century-old brownfield site that for years separated the community from the scenic Columbia River. The project required extensive shoreline restoration, and environmental planning and permitting. The new park features plazas, terraces, open lawns, playground and picnic areas and an urban beach. A unique one-sided, cable-stayed structure called the Grant Street Pier carries visitors over the Columbia River nearly 100 feet with no in-water elements. The park is expected to fuel a revitalized waterfront, with 3,000 new residential units and 1 million square feet of mixed-use space already planned.



#### **ACEC 2019 ENGINEERING EXCELLENCE AWARDS**

#### **NATIONAL RECOGNITION AWARD WINNERS**

FIRM NAME	PROJECT NAME	FIRM NAME	PROJECT NAME
ACEC/ALABAMA Building & Earth Sciences	The Vesta Apartments Geotechnical Engineering	ACEC/GEORGIA NOVA Engineering & Environment/ Stevens & Wilkinson	Sweetwater Ruins at Sweetwater Creek State Park
Sain Associates	Dunnavant Square Pedestrian Tunnel	Parsons Corp. Schnabel Engineering	Northwest Corridor Express Lanes Lake Peachtree Spillway Replacement
ACEC/CALIFORNIA		ACEC/HAWAII	
BKF Engineers Carollo Engineers	San Pablo Avenue Bike and Pedestrian Improvements Aquifer Storage and Recovery Wells	Fukunaga & Associates	Ala Moana Wastewater Pump Station Force Mains 3 & 4
Carollo Engineers	Southeast Surface Water Treatment Facility	ACEC/IDAHO McMillen Jacobs Associates	Allison Creek Hydroelectric
GHD Kjeldsen, Sinnock & Neudeck	Redwood Business Park and Talmage Interchange Wallace Weir Fish Rescue Facility	McMillen Jacobs Associates McMillen Jacobs Associates	Design-Build Project Esther Simplot Park Swan Lake Reservoir
PGH Wong/AECOM/ Ghirardelli/MNS/SAMJV	eBART to Antioch: East Contra Costa Extension	POWER Engineers Stanley Consultants	Expansion Project Kizildere-3 Geothermal Power Plant Boise River Greenbelt
San Diego Gas & Electric/NV5	Sycamore to Peñasquitos 230kV Transmission Line	Stanley Consultants	Pathway Reconstruction I-15, I-86 System Interchange Value
Syska Hennessy Group Towill	Maintenance & Operation Facility San Andreas Pipeline No. 2	ACEC/ILLINOIS	Planning Study
ACEC/COLORADO Felsburg Holt & Ullevig	State Highway 9 Iron Springs	Clark Dietz	MCORE - Transforming the Core of the Community
HDR	I-70 Mountain Corridor Eastbound Express Lane	Crawford, Murphy & Tilly	Barrington Road at I-90 Interchange & Park-n-Ride
Martin/Martin Martin/Martin	1144 Fifteenth Canvas Stadium	Crawford, Murphy & Tilly	Sugar Creek Wastewater Treatment Plant
Muller Engineering Co.	Linking Lookout: U.S. 6th and 19th Street Interchange	HNTB OMEGA	Wilson Transfer Station Inbound I-55 at U.S. 41
Muller Engineering Co. Wilson & Co.	Westminster Station Park I-25/Cimarron Interchange— The Gateway Project	Stantec/WSP USA	(Lake Shore Drive) Interchange Albany Park Stormwater Diversion Tunnel
ACEC/CONNECTICUT		ACEC/INDIANA	
Michael Baker International RACE Coastal Engineering	Hartford Line Station Design Fort Nathan Hale Pier Project	Strand Associates	City of Columbus People Trail Extension
WSP USA/STV	New Haven-Hartford-Springfield Rail Program	ACEC/IOWA HNTB	Iowa City Gateway - Park Road
ACEC/DELAWARE AECOM	Delaware Memorial Bridge	IIW	Bridge & Dubuque Street Upper Bee Branch
Rummel, Klepper & Kahl	Cable Dehumidification Lane Extension Results in Major Improvements	Ulteig Engineers	Creek Restoration GIS Application Solution for Energy Distribution
ACEC/FLORIDA		ACEC/KANSAS	n·1 n·· · c 1
RADISE International/ Smart Structures	Tamiami Trail Bridge Life Cycle Monitoring	Burns & McDonnell	Bridge Raising in Sumner and Sedgwick Counties
Walt Disney Imagineering/ Walter P Moore	Pandora - The World of Avatar	George Butler Associates	I-135 Canal Route Bridge Repair - Phase I
Walter P Moore/Gresham Smith/ Master Consulting Engineers	Automated People Mover and ConRAC	HNTB	Kansas Turnpike Open Road Tolling Conversion
		ACEC/KENTUCKY American Engineers	Mammoth Cave Echo River Trail
-	and the same of th	Bacon Farmer Workman Engineering & Testing	Reconstruct I-24/I-69 Interchange
		EA Partners	A Safer Path
		Michael Baker International QK4	The Lake Bridges Churchill Downs - Sustainable Water Quality Infrastructure
The Jeremiah Morrow Bridge, locate		QK4	Kentucky's Touchstone Energy Cooperative - PowerVision
	d in Oregonia, Ohio, was designed by al Recognition Award winner.	ACEC/MARYLAND Gannett Fleming Whitman, Requardt and Associates	Bel Air Impoundment Back River Water Resource Recovery Facility

FIRM NAME	PROJECT NAME	FIRM NAME	PROJECT NAME
ACEC/MASSACHUSETTS		ACEC/NEW JERSEY	
BR+A Consulting Engineers	MIT.nano	AmerCom	U.S. Route 206 Bridge Replacement
GZA	Upper Roberts Meadow		in 9 Days
	Reservoir Dam Breach and Stream Restoration	Control Point Associates	Burlington-Bristol Bridge Scan and Model
Jacobs Engineering Group	New Airport Taxiway with CAT III Landing System	Dewberry Engineers Gannett Fleming	Interchange 163 Improvements N.J. Turnpike Interchange
Nitsch Engineering	MIT North Corridor	B	14A Improvements
Parsons Corp.	Fore River Bridge	HNTB	Open Road Tolling
Simpson Gumpertz & Heger	Underground Transmission Line	Leafe Factoreties Comm	Implementation 5 Bridges
STV Tetra Tech	Longfellow Bridge Rehabilitation Liberia Municipal Water Program	Jacobs Engineering Group Langan Engineering and	Conrail Penns Grove Siding Track 700 Jackson Redevelopment and
	Elberia ividineipai water i rogram	Environmental Services	Resiliency Park
ACEC/METRO WASHINGTON	0 1 1 1 1 1 1 1 1	T&M Associates	Berkeley Island County Park
Alpha Corp.	Gateway Arch National Park Program Management	WSP USA	Cedar Bonnet Island Habitat
A. Morton Thomas and Associates	The Wharf - Phase I		Restoration Plan
Arup	New London Embassy	ACEC/NEW MEXICO	
M.Ĉ. Dean	"Rain" - M Street Underpass	North GeoEngineering Services	Excavation Support Design/
Missal Engine	Art Park		I-25 Bridge Widening
Nitsch Engineering	Kennedy Street Green Infrastructure Challenge	ACEC/NEW YORK	
Sheladia Associates	WMATA Paint Booth at	AKRF	American Copper Buildings
	Landover Bus Garage		Stormwater Detention
WSP USA	Virginia Military Institute Corps	Arcadis U.S.	Polyfluoroalkyl Substances
	Physical Training Facility	Arup	Treatment Plant Hunter's Point South, Phase 2
ACEC/MICHIGAN		Arup	The Bloomberg Center
Beam, Longest and Neff	GHIB Acquisition +	C.T. Male Associates/	Precise Interior/Exterior Control
	D4 Engineering Consulting	Landscape Architecture &	
Benesch NTH Consultants	I-75 over the Rouge River	Geology	Class 87 Carra Bissalida
N1H Consultants	Using Horizontal Directional Drilling to Mitigate Sinkhole Risks	Cameron Engineering & Associates	Clean & Green Biosolids Processing Facility
Ruby + Associates	New GM Truck Manufacturing Facility	Cameron Engineering & Associates	Randall's Island Water Reclamation Project
WSP Michigan/HNTB/Mannik and Smith Group/ NTH Consultants		CDM Smith Dewberry	Queen Ditch Restoration Project NYC Climate Resiliency
ACEC/MINNESOTA		Ecology and Environment	Design Guidelines Radiological Soil Sorting
AKF Group	Westminster Presbyterian	Engineering and Geology	Pilot Study
D F :	Church Renovation	Hardesty & Hanover	Grand Central Parkway
Barr Engineering Co.	Minnesota 210 Design-Build Flood Repair	II 1	Interchange Reconstruction
LHB/American Engineering Testing/		Hardesty & Hanover HDR	Johnson Street Bridge Governor Mario M. Cuomo Bridge
Ericksen Roed and Associates/	•	Jaros, Baum & Bolles	Helen L. and
KFI Engineers	Mr. It A. D		Martin S. Kimmel Pavilion
Mattson Macdonald Young Short Elliott Hendrickson	Minneapolis Armory Renovation Nine Mile Creek Regional Trail	LaBella Associates	Rochester Train Station
Short Elliott Hendrickson/	St. Anthony Parkway Bridge Over	LERA Consulting Structural Engineers	Martin S. Kimmel Pavilion
Parsons Corp.	BNSF Northtown Yard	Parsons Corp.	Goethals Bridge
ACEC/MISSOURI		1	Replacement Project
Anderson Engineering	Cassville School Flood	Stantec	Martin Luther King Jr. Memorial
8	Mitigation Project	STV	Park Improvements World Trade Center Cortlandt Street
Burns & McDonnell	US-169/I-70 North Loop	317	Subway Station Reconstruction
Civil Design	PEL Study	Syska Hennessy Group	Legacy West Campus
Civil Design IMEG	Remapping Data Collection The Museum at the Gateway Arch	T. Y. Lin International	Niagara Falls State Park
	Traceam at the Sateway Friend	Thornton Tomasetti	Transformation Initiative
ACEC/MONTANA	Will C I D · F	Wendel	Stavros Niarchos Foundation Cinder Bed Road Bus
DJ&A	Willow Creek Reservoir Emergency Survey & Mapping		Maintenance Facility
HDR	Columbus Rapelje - Nye 115kV	WSP USA	53 West 53rd Street Tower
	Transmission Line	WSP USA	Times Square Shuttle Station
Pioneer Technical Services	Prickly Pear Creek Realignment		Reconstruction Study
ACEC/NEBRASKA		ACEC/NORTH CAROLINA	MICLIAN E
HDR	Flanagan Lake	McKim & Creed	Melinda K. Knoerzer Adaptive
HDR HDR	Fred & Pamela Buffett Cancer Center Minne Lusa Pump Station	S&ME	Ecosystem Reclamation Novo Nordisk Surcharge Program

ACEC/NORTH DAKOTA KLJ

Sheyenne Street Corridor Study

ACEC/NEW HAMPSHIRE Hardesty & Hanover/ FIGG Bridge Engineers

Sarah Mildred Long Bridge

#### ACEC 2019 ENGINEERING EXCELLENCE AWARDS

#### NATIONAL RECOGNITION AWARD WINNERS

**PROJECT NAME** FIRM NAME **PROJECT NAME FIRM NAME** ACEC/OHIO Jones Carter Corrosion Study of Alternative HDR I-71 at MLK Drive Water Source Jeremiah Morrow Bridge **HNTB** JQ Engineering Zachry Engineering Dublin Road Water Plant Treatment **Jacobs Engineering Group Education Complex** Capacity Increase Lakefront West - Mainline Lockwood, Andrews & Newnam University Boulevard Extension Michael Baker International Repair & Revitalization of Hamilton Road Widening ms consultants Washburn Tunnel **Strand Associates** Fairhill-MLK Green Walter P Moore Hurricane Harvey Emergency Ambassador Project Flood Modeling **ACEC/OKLAHOMA ACEC/VIRGINIA** CP&Y Hefner Water Treatment Plant A. Morton Thomas and Associates Southgate Drive/ Sludge Handling U.S. 460 Bypass Interchange Water Reclamation Garver Clark Nexsen Central Vehicle Wash Facility and Facility Phase 2 Upgrades TEMF Complex **HNTB** Riverside Drive and Bridge Street Pump Station Weight Restricted Bridge Crossings Gathering Place Johnson, Mirmiran & Thompson ACEC/OREGON Mason & Hanger New U.S. Embassy Pulse Bus Rapid Transit STV **Anderson Perry & Associates** Crooked River Wetlands Alpine Avenue Reconstruction VHB Carter's Grove Plantation **HDR HDR** Infinity Loop ACEC/WASHINGTON **HDR** West Vancouver Freight Access Vancouver Waterfront Park BergerABAM **Kennedy Jenks Consultants** Wastewater Treatment Plant Upgrades **David Evans and Associates** East Link Extension -**ACEC/PENNSYLVANIA** Spring District 120th Station **David Evans and Associates** Restoration of the Mariposa Grove A.D. Marble MP 242 to MP 245 Roadway of Giant Sequoias Reconstruction and Widening Positive Train Control for SEPTA **HDR** Henderson Combined Sewer **Burns Engineering** Permanent Sheet Pile Wall Overflow Reduction Earth, Inc. Route 30 Landslide Remediation **HDR** Murray Wet Weather Facility **Gannett Fleming** Wildfire Transmission Line Delaware River Bridge Michael Baker International HDR Emergency Response Risk Assessment (I-676) Bridge Yesler Way Bridge Reconstruction HDR Pennoni HDR/Shannon & Wilson SR 520 West Approach Bridge North Reconstruction Project **Magnusson Klemencic Associates** Salesforce Tower **ACEC/SOUTH CAROLINA** Alaskan Way Viaduct WSP USA Civil Engineering Consulting Services I-95/U.S. 301 Interchange and Replacement Program U.S. 301 Connector **ACEC/WEST VIRGINIA** Historic Glendale Iron Mead & Hunt Pedestrian Bridge The Thrasher Group Wastewater Treatment Plant Upgrade Michael Baker International Nexton Parkway Interchange **ACEC/WISCONSIN Thomas & Hutton** Horry County Schools Think Forward 45 Zoo Interchange Core and Energy Positive Adjacent Arterials **Thomas & Hutton** South Carolina's Short Elliott Hendrickson Lower Yahara River Framework for Freight Trail Construction **TranSystems** Salters Road Wastewater Treatment **Strand Associates** Widening Improvements

#### **ACEC/TENNESSEE**

AECOM

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Freese and Nichols Freese and Nichols

HDR/Pape-Dawson Engineers

Kingston Water Quality
Improvement Program
Bush Brothers Process Water
Reclamation Facility
New Survey Tools Upgrade
Knoxville's Old City
Bridge Movement Monitoring
BNSF Railway Bridge
Capitol Connector Tunnel
Crosstown Concourse
Vicksburg 115kV
Improvement Project
Cumberland Avenue
Corridor Project

Edmond Elevated Storage Tower Upper Brushy Creek Dam 7 Modernization Project San Pedro Creek Culture Park

# The Bloomberg Center, located in New York, was designed by Arup, New York, and is a 2019 National Recognition Award winner.

Plant Improvement

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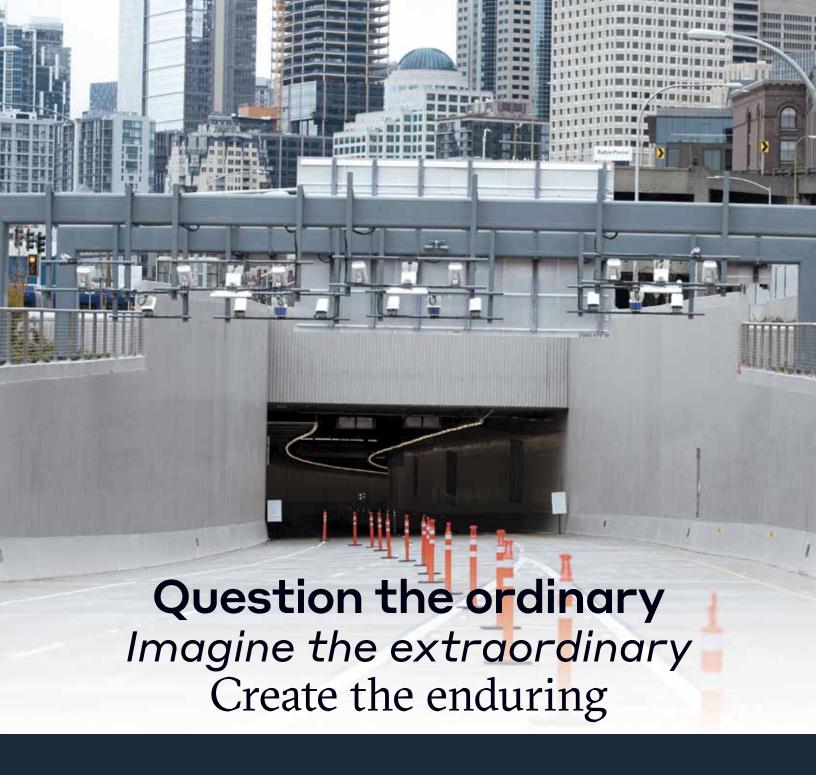
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2019 National ACEC EEA Recognition Award Winner

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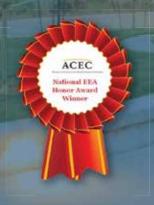
# LINKING LOOKOUT: US 6 AND 19TH STREET INTERCHANGE

City of Golden and Colorado Department of Transportation



# WESTMINSTER STATION PARK

City of Westminster and Urban Drainage and Flood Control District







Transportation
Facilities Design



Traffic/ Intelligent Transportation Systems (ITS)



Stream Design



Stormwater Management



Water and Wastewater Utilities



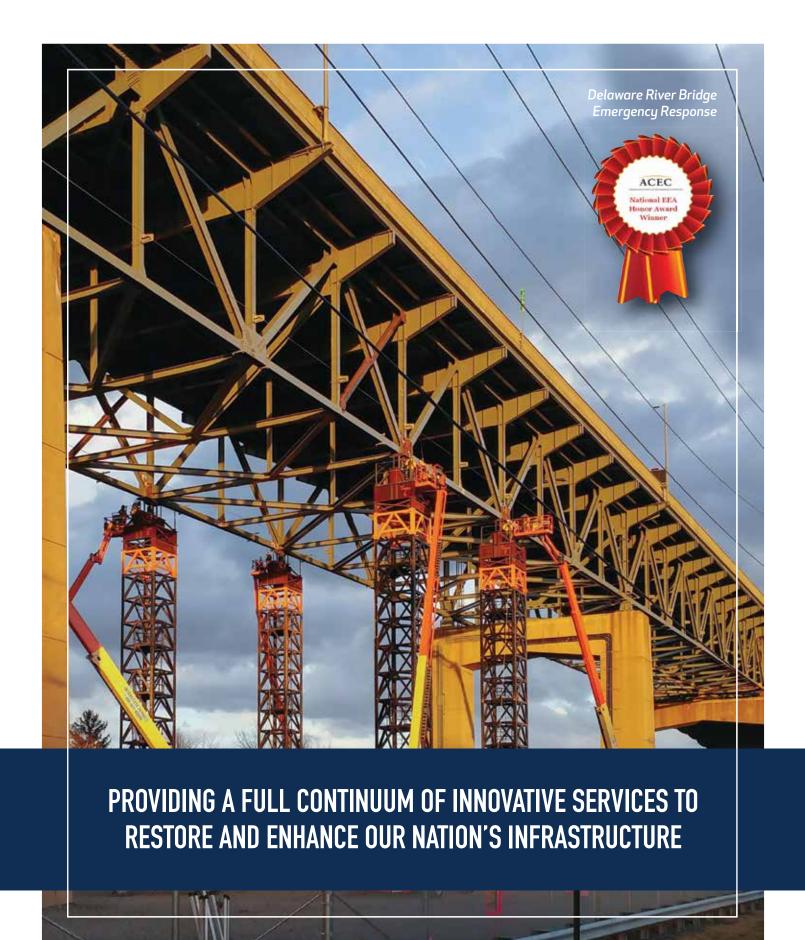
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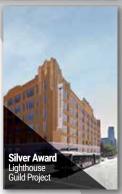
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HNTB congratulates our colleagues and partners on the Grand Award-winning Milwaukee Zoo Interchange and Honor Award-winning Riverside Drive and Gathering Place and American Center for Mobility.









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The HNTB Companies Infrastructure Solutions

Milwaukee Zoo Interchange, Wisconsin

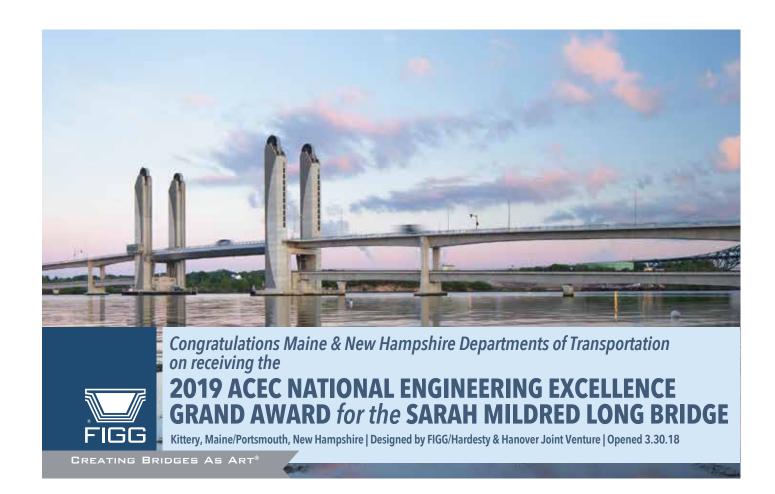


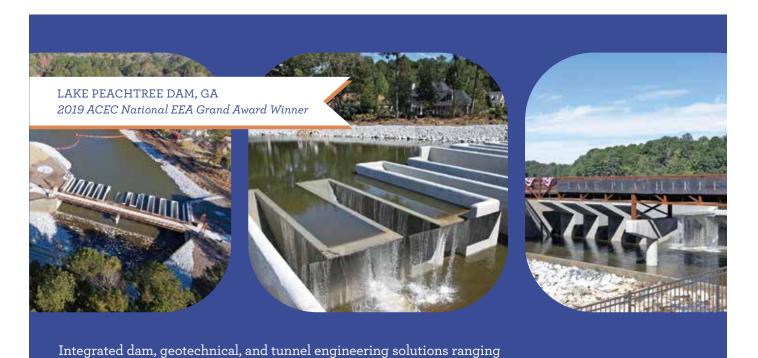




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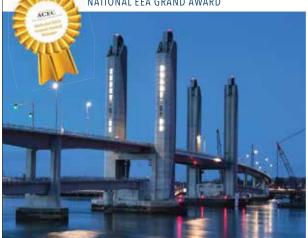
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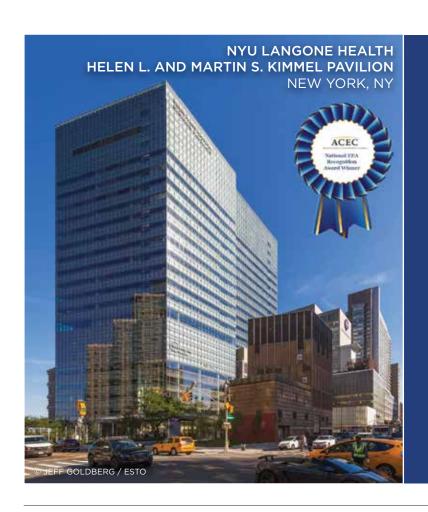






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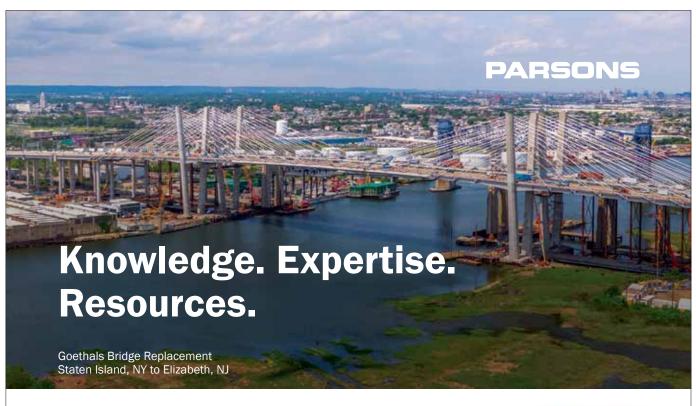


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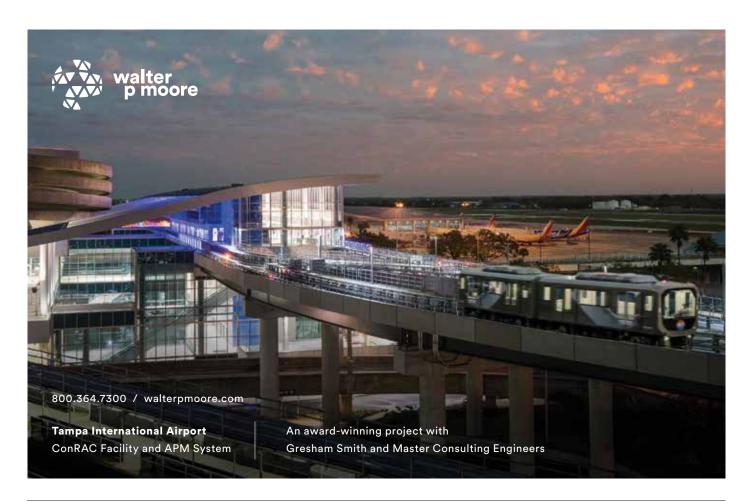
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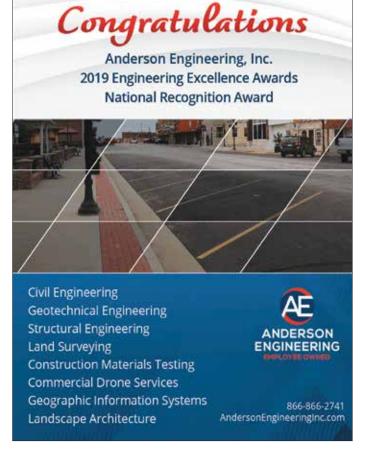
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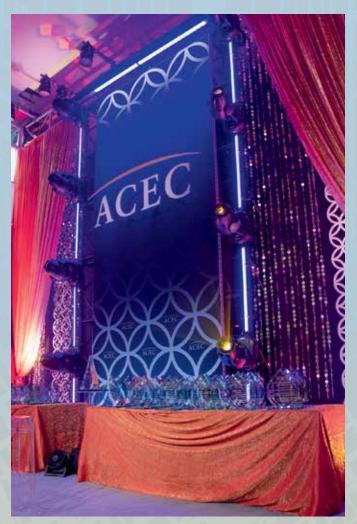
























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COVER: ROBERT PISANO



ACEC's award-winning bi-monthly 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.

## **Annual Convention is an Impressive Show of Force**

he recently concluded 2019 Annual Convention in Washington, D.C., was a fast-paced and energizing event reflecting the engineering marketplace that spawned record attendance at our Engineering Excellence Awards Gala. We celebrated an abundance of projects and firms that are riding a wave of prosperity, which our Member Firms hope to enjoy for years to come.

For an in-depth look at the 2019 economic trends and indicators, we encourage you to review the Q1 2019 & Annual Outlook. The economic outlook was produced by ACEC's Business Resources and Education staff, and released during the Convention (visit www.acec.org/publications/acec-private-industry-briefs/).

As we concluded the Convention, we gave thanks to Manish D. Kothari who stepped down after an action-packed year as ACEC's chairman. We look forward to working with new Council Chairman Mitchel W. Simpler, managing partner of Jaros, Baum & Bolles, along with the other new members of the Executive Committee.

A major Convention highlight was the hundreds of ACEC "citizen lobbyists" who visited more than 300 congressional offices to promote the Council's legislative agenda, underscored by infrastructure investment and sustainable energy (see page 12).

The Engineering Excellence Awards Gala, hosted by Ross Shafer, was celebrated in grand style by nearly 800 attendees who honored the world's finest engineering efforts. Congratulations to WSP USA in winning the 2019 Grand Conceptor Award for the Alaskan Way Viaduct Replacement in Seattle. All Engineering Excellence Award winners should be tremendously proud of their notable achievements (see page 18).

This issue of *Engineering Inc.* also features a captivating chronicle on how Gannett Fleming leaders helped prevent serious injuries from a major landslide that destroyed a section of a critical Pennsylvania highway (see page 54).

Finally, after engaging with hundreds of industry leaders at the Convention from all corners of the nation—it reminds us of the truly immense expertise, commitment and coast-to-coast contributions made by our Member Firms. Together, we are a force and a powerful catalyst for positive change.

ACEC Nation is one of a kind. Thank you for being part of it.

Mitchel W. Simpler ACEC Chairman

Linda Bauer Darr

ACEC President & CEO



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## Strong Retail Sector Adapts to Connect with Customers

By Gerry Donohue

he predicted retail apocalypse due to the explosive growth of online stores never happened. Construction put-in-place in the retail sector grew by more than 11 percent annually from 2013 to 2018, outpacing most other sectors and the construction market as a whole.

"The retail sector is more fluid than most," says Greg Steinmetz, who leads the retail practice at Dunham Associates, a mechanical and electrical consulting engineering firm in Minneapolis. "It's quicker moving, spotting trends early and responding rapidly."

Rather than roll over due to the onslaught of virtual shopping, the brick-and-mortar retail sector has adapted to a new market reality and changed to meet the demands of the buying public.

"Our clients are very savvy," says Jennifer Bennett, who heads the Quad Cities office of Shive-Hattery. "They are thought leaders and are ahead of the market."

For example, in recent years the construction focus in the sector has shifted. "Rather than new construction going up, we're seeing a shift to remodeling," says Jason Wollum, who

FMI forecasts that retail construction put-in-place will continue to grow in 2019, up by 4 percent, but then decline by 3 percent in 2020 and 1 percent in 2021, before rebounding to grow by 3 percent in 2022

leads the retail practice at Henderson Engineers in Kansas City, Missouri. "A lot of the experts say we have more retail space in the U.S. than we should have."

The demise of several large retailers, such as Sears and Sports Authority, has opened opportunities for other companies. "We're doing a lot of work subdividing those big-box spaces," says Steinmetz.

The retail sector lives and dies by the national economy. When markets are growing, people are buying and retail clients are building. When the economy stumbles, so does the retail sector.

"The past three or four years have been incredibly strong," says Wollum. "In the short term, we expect the market to continue to perform well."

Many economic forecasters anticipate that the nation's record economic expansion will slow—and perhaps fall into recession—at some point in the next two years. Reflecting this expectation, the management consulting firm FMI forecasts that retail construction put-in-place will continue to grow in 2019, up by 4 percent, but then decline by 3 percent in 2020 and by 1 percent in 2021, before rebounding to grow by 3 percent in 2022.



## TAPPING INTO OMNICHANNEL

"The buzzword in the industry right now is omnichannel," says Wollum. "It describes how retailers are using different ways to connect with their customers—online, mobile and physical retail."

The omnichannel impact on store design has been significant.

To lure buyers away from their computers, retailers are creating a great customer experience, says Bennett. "They're focusing on beautiful stores with higher end finishes and catering to the customer when they walk in the door," she says.

As a result, says Wollum, clients are shying away from cookie-cutter designs. "Retail stores are becoming more customized with the focus on customer service. Retailers are looking to create more experiential spaces," he says.

Store spaces are also getting smaller. "People are changing the way they shop," says Wollum. "They go to the store to get an idea of what they want and then order it online and have it delivered to their front door. Stores don't need to carry an extensive inventory or have a large sales floor."

"Convenience and transaction time will continue to be a key for capturing more of the market," adds Bennett. "One of our grocery clients is adding smaller brick-and-mortar stores throughout their service area."

Many retailers now offer buy online, pick up in store options, allocating sections of their stores for these quick transactions.

"We're seeing more brick-and-mortar retailers move to capture the online shopper by offering same-day curbside or home delivery," says Bennett.

Technology is also playing a bigger role in store design. While Amazon Go, the online giant's cashierless convenience store concept, has grabbed the headlines, many retailers are developing systems to improve their customers' in-store experience.

Steinmetz says retailers are looking to use artificial intelligence to customize the shopping experience. "They may help a customer visualize how a product would look in their house," he says. "Or they might track an individual as they walk through the store and shoot a coupon to their cellphone when they're near a certain product."

"Technology is going to drive what we see in retail in the coming years," says

#### **Commercial Construction Put-in-Place**

Change from Prior Year – Current Dollar Basis

4th Quarter 2018 Forecast (based on Q3 2018 Actuals)

2013	12%
2014	18%
2015	5%
2016	19%
2017	2%
2018	2%
2019	4%
2020	-3%
2021	-1%
2022	3%

Source: FMI Corporation

Wollum, "creating interactive experiences in stores and integrating personal devices into the shopping experience."

Gerry Donohue is ACEC's senior communications writer. He can be reached at gdonohue@acec.org.



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### **LEGISLATIVEACTION**

### New Proposed Overtime Pay Rule Released

he Department of
Labor (DOL) released
a new proposed rule
on overtime pay
under the Fair Labor Standards
Act. The law gives DOL the
authority to periodically update
the salary threshold below
which employees who work
more than 40 hours in a week
must be paid time and a half
overtime.

In 2016, DOL approved increasing the threshold from \$455 weekly/\$23,660 annually to \$913 weekly/\$47,476 annually, which represented a 100 percent increase during a time period when cumulative inflation was 26 percent. That rule was scheduled to take effect on Dec. 1, 2016, but was overturned by a federal judge.

The new proposed rule would raise the overtime pay salary threshold to \$679 weekly/\$35,308 annually. DOL retained the current duties test for determining whether an employee who earns more than the salary threshold is exempt from overtime pay. These changes reflect recommendations ACEC made in response to a 2017 request for information from DOL.

ACEC submitted comments in support of the proposed rule. DOL will publish a final rule after it has reviewed all feedback.



## ACEC Calls on Lawmakers to Continue Forward with Infrastructure Agenda

espite a setback in negotiations between President Trump and congressional Democratic leaders, ACEC continues to make the case for a broad infrastructure investment initiative this year. In a letter joined by multiple stakeholder groups, business and labor organizations, the Council called on lawmakers to come back to the table and identify revenue options for funding the bill.

"Every day, the cost of federal inaction grows. As representatives for millions of American businesses and workers who are counting on you to rebuild our infrastructure and grow our economy, we urge you to immediately resume discussions on America's failing infrastructure and take legislative action this year," the groups wrote. "The time to act is now."

The letter specifically highlighted the gas tax as the simplest and most effective means for funding federal transportation programs, noting that Democrat and Republican legislators in conservative, liberal and swing states have already increased their state gas tax to finance their share of infrastructure improvements.

Funding and financing a 21st century infrastructure agenda—including surface transportation, airports, water and wastewater and public buildings—was a key component of the lobbying visits with members of Congress during the ACEC Convention and Legislative Summit. The House and Senate infrastructure committees are currently developing proposals for the reauthorization of surface transportation programs under the FAST Act, a substantial increase in Clean Water and Drinking Water State Revolving Fund programs, funding for ports and waterways and other legislative initiatives.

### **ACEC-Backed Water Bill Introduced**

ouse Transportation and Infrastructure Committee Chairman Peter DeFazio, D-Ore., introduced the Water Quality and Jobs Creation Act (H.R.1497), which would reauthorize and expand federal funding for wastewater projects around the country.

H.R. 1497 authorizes \$20 billion over five years for the Clean Water State Revolving Fund program. The program has played an important role in helping communities pay for necessary infrastructure improvements and has provided over \$126 billion in assistance since its inception in 1987.

With the focus on infrastructure this year, the bill could be included in a larger infrastructure package or be included in the next round of the Water Resources Development Act.



Rep. Peter DeFazio, D-Ore.

### **Legislation Introduced to Make Passthrough Deduction Permanent**

en. Steve Daines, R-Mont., introduced the Senate version of the Main Street Tax Certainty Act, which would make the Section 199A 20 percent passthrough tax deduction permanent. Reps. Jason Smith, R-Mo., and Henry Cuellar, D-Texas, introduced identical legislation in the House.



Sen. Steve Daines, R-Mont.

The Tax Cuts and Jobs Act (TCJA) lowered the corporate tax rate from 35 percent to 21 percent, which provides significant tax relief for engineering firms organized as C corporations, including personal services corporations. The law also created the Section 199A 20 percent tax deduction for passthrough firms, including S corporations, partnerships and sole proprietorships.

The 21 percent corporate rate is permanent, but the Section 199A deduction is one of many provisions in the TCJA that expire at the end of 2025. ACEC joined over 100 other organizations in sending a letter of support for the Main Street Tax Certainty Act to the leaders of the House and Senate tax-writing committees.

### **ACEC Leads Effort to Counter** 'Transparency' Legislation

ACEC joined other professional services groups from the technology, cybersecurity and construction industries on an open letter to governors, state lawmakers, state IT leaders and procurement officials that outlined their shared concerns over legislation under consideration in multiple states to impose computer monitoring requirements on contractors doing work for state agencies.

The legislation, which is being pushed by a company called TransparentBusiness, has raised significant privacy and compliance concerns among members of ACEC state organizations, whose members already operate under federal and state regulations and agency policies that govern and manage contract negotiation, oversight and deliverables.

The technology mandated through this legislation would automatically collect data on all work performed by a contractor on a computer, including tracking total keystrokes and mouse event frequency and recording screenshots at least once every three minutes.

Because many services provided by A/E firms go well beyond computer keystrokes, ACEC state chapters have effectively argued that this proposed mandate has little relevance to how the industry operates. The Council has also raised serious cybersecurity concerns over the software mandates covered in the proposed legislation.

ACEC's efforts were featured in a recent Bloomberg Law article, "States Want to Snoop on Contractors, but Plans Are Stalling," written by Andrew Wallender and Sara Merken.

ISSUES ON THE MOVE	WHAT'S NEXT
Department of Labor overtime rule	Final rule expected this summer
Wastewater funding	Likely to be included in larger infrastructure package later in the year
New wetlands rule	Possible final rule this summer



CEC submitted written comments to the Department of the Army and the Environmental Protection Agency in April in response to a proposal to revise the definition of "waters of the United States" (WOTUS).

ACEC's comments noted that the proposed revision favorably addresses nearly every issue it had raised previously concerning the 2015 WOTUS rule. ACEC stated that the revised definition was a positive step toward pragmatically balancing federal and state jurisdiction with economic needs and the public interest of achieving the goals of

"America's engineering industry is keenly aware of the need to design a sustainable built environment, consistent with responsible environmental protections," says ACEC President and CEO Linda Bauer Darr. "The 2015 WOTUS rule went too far in expanding the definition of wetlands subject to federal jurisdiction and would have caused needless complications in the permitting process. The current revision is a welcome change and a promising course correction."

the Clean Water Act.

## News

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





## U.S. Energy Growth to Continue with a 'Second Wave' of the Shale Revolution Coming

By Erin McLaughlin

emarking that "no country is an energy island," Dr. Fatih Birol, executive director of the International Energy Agency (IEA) made his third annual visit to the U.S. Senate Energy and Natural Resources Committee in February, sharing his outlook for global energy markets, including an emphasis on the United States' role as worldwide energy leader and No. 1 exporter.

Birol, considered the world's leading energy economist and expert, is chairman of the World Economic Forum's (Davos) Energy Advisory Board and a member of the U.N. Secretary-General's High-level Group on Sustainable Energy for All.

According to IEA, the U.S. is on the path to become a net petroleum exporter by 2021. Last year, the U.S. surpassed Russia and Saudi Arabia to become the world's largest producer of crude oil. The global demand for energy is not slowing down and is expected to grow 25 percent by 2040, largely due to urbanization and industrial development in Asia.

"Satisfying expected gas demand growth in Asia would require additional supply equal to building one new average size U.S. liquid natural gas project every five months," says Birol.

Although some personal vehicles are transitioning to electricity as a main power source, passenger cars only make up 18 percent of demand worldwide. The market to fuel aviation, commercial trucks and the petrochemical industry continues to grow, and oil is likely to maintain its position as the dominant energy source.

Besides the continued strength of the oil market, there were several key takeaways from Birol's outlook. A SECOND SHALE REVOLUTION

Natural gas and shale oil markets continue to grow "very, very strongly," according to Birol. The markets will be driven largely by demand from China, which is the largest gas importer in the world, particularly liquid natural gas.

"The importance of the U.S. shale industry for the global economy cannot be overemphasized," says Birol. IEA forecasts 70 percent of the growth in world oil production to 2025 will come from the U.S. Birol explained that the first wave of the shale revolution was largely for U.S. consumption, resulting in needing less imports; the second wave will be primarily about growth in exports for worldwide consumption. According to IEA, in 2018 U.S. shale production grew faster than during the boom years of 2011 to 2014.

## GEOPOLITICAL TENSIONS AND NATURAL DISASTERS

Birol expressed concerns about geopolitical tensions that may be connected to key energy countries including Russia, Iran, Venezuela, China, and the United Kingdom as it figures out its Brexit. The other leading concern is the growing occurrence of hurricanes in the U.S.

### RENEWABLES CONTINUE TO GROW

Wind and solar energy infrastructure are continuing to grow on a global basis, largely because related technologies are becoming cheaper, and governments are still subsidizing advancement of these sources. Currently, wind and solar provide only 6 percent of global power generation. However, over the next two decades, they will account for half of the growth in electricity generation, according to IEA. The transmission network of renewable energy is getting much-needed attention, and a focus on bottlenecks related to energy storage should be next.

"Satisfying expected gas demand growth in Asia would require additional supply equal to building one new average size U.S. liquid natural gas project every five months."

EXECUTIVE DIRECTOR INTERNATIONAL ENERGY AGENCY















The Private Side is a regular department of Engineering Inc., focusing on the private-sector markets listed above, and information and insights on public-private partnerships and economic data relevant to the industry. For more on these topics, subscribe to ACEC's bimonthly

https://programs.acec.org/ industrybrief/.

Private Industry Briefs:

Erin McLaughlin is ACEC's senior director of private market resources. She can be reached at emclaughlin@ acec.org



### Tampa Surges to a 'Top 10' Market

When ACEC's Coalition leaders visited Tampa, Florida, this past winter for meetings and roundtable discussions, local leaders were excited to discuss the city's commercial and residential real estate market and growth.

According to the PwC/Urban Land Institute's "Emerging Trends in Real Estate 2019" report, Tampa broke into the top 10 for the first time. According to the report, Tampa ascended more dramatically than any other city—as it ranked 35th in 2007.

Understanding the reasons behind Tampa's rise as an emerging market is important for engineering firms who may want to drive comparable momentum in cities where they have an established presence. Engineering firms also can use Tampa's growth as a baseline to help other cities identify specific areas of future growth.

The key elements to Tampa's success include:

- Affordability, which is critical to luring new residents from states with higher taxes and home prices.
- Reconstructing Tampa International Airport, now considered the best in the region.
- Strong political leadership from Tampa's growth-minded mayor, Bob Buckhorn.
- Successfully retaining young professionals, which helps create a more vibrant community and economy.
- Ensuring public support for infrastructure. Residents recently voted for a referendum that adds a 1-cent sales tax to fund regional transportation projects.
- Revitalizing waterfront areas in Tampa and St. Petersburg, resulting in the development of dynamic, mixed-use projects.



### **P3s Demonstrate Revenue Stream Diversity**

The use of public-private partnership (P3) contracts for developing infrastructure is continuing at a steady pace in the U.S. Overall trends include P3s being used for large projects—those with total costs in excess of \$125 million—as well as an increasing variety of project types beyond transportation, including social infrastructure, broadband projects and water and wastewater facilities. Social infrastructure is defined by building projects, including health care, education, housing and civic facilities.

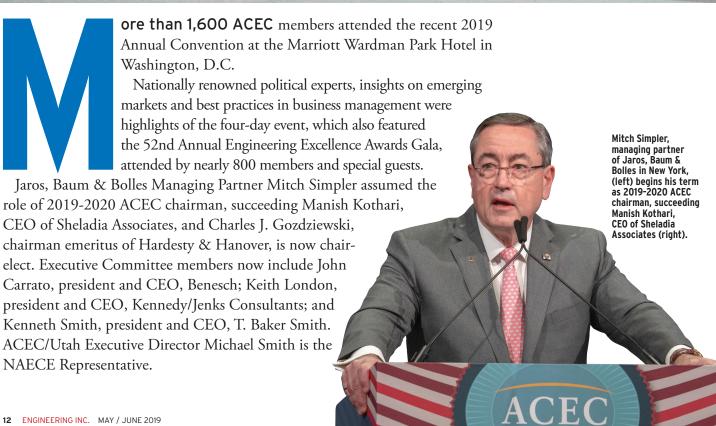
The Husch Blackwell "Public-Private Partnership Report," published in March 2019, details 13 major P3 projects that financially closed in 2017-2018. Of the 13 projects, three are airports, four are roadways, one is transit and the remaining five are social infrastructure.

### 2017-2018 U.S. P3 FINANCIAL CLOSINGS:

- 1. Los Angeles International Airport automated people mover
- 2. Los Angeles International Airport ConRac
- **3.** Denver Airport (Jeppesen Terminal)
- **4.** Colorado's Interstate 70
- **5.** Purdue University student housing
- **6.** Lansing Correctional Facility, Kansas
- 7. Howard County, Maryland Courthouse

- 8. Massachusetts Bay Transit Authority Automated Fare Collection System
- **9.** Michigan's Interstate 75
- **10.** Wayne State University student residences
- 11. Texas Woman's University student housing
- **12.** Virginia's Interstate 395
- **13.** Virginia's "Transform 66"







Meanwhile, the ACEC/PAC banked over \$270,000 in Convention fundraising, bringing this year's total to more than \$464,000—well-positioning the Council to keep pace toward a fourth consecutive ACEC/PAC goal of \$1 million.

"The Annual Convention is something I look forward to attending every year," says Melvin Williams, vice president at S&ME. "Besides having the opportunity to hear directly from knowledgeable political pundits about what is going on inside the D.C. beltway, I am able to obtain valuable knowledge from a choice of great sessions to not only improve my firm's bottom line but also my professional development."

"I really enjoyed the advocacy aspect of the Annual Convention, especially because we do not get to Washington, D.C. often being based in Alaska," says Matthew Stone, associate vice president at HDR in Anchorage, Alaska. "I thought Sunday was a great day, and I enjoyed the Leadership Breakfasts and the CEO Roundtables. I am taking over as national director, and the information from the Convention has been very helpful."



Muller Engineering representatives celebrate receiving an Honor Award at the EEA Gala for the Westminster Station Park in Westminster, Colorado.



## POLITICAL ANALYSTS BRAZILE AND PERINO ADDRESS POLARIZATION, INFRASTRUCTURE, 2020 ELECTION

FOX News analysts Donna Brazile and Dana Perino discussed the polarization of national politics, prospects for an infrastructure funding bill and the presidential election during the Convention.

"Too few Americans are voting," says Brazile, a former chair of the Democratic Party. "As a result, the most passionate

people on each side are raising money and raising hell. The majority in the middle are just not engaged."

Both Brazile and Perino, former press secretary for President George W. Bush, urged Convention attendees to make their voices heard. "Go to the congressional offices and tell them about your work, your needs and the legislation you want to see passed," says Brazile.

"Let them know that you are going to support them when they have to make a tough vote," Perino says.

They agreed that infrastructure is one of the top issues on Capitol Hill right now but were not optimistic about passage of a major funding bill. Perino says Congress has a lot of contentious work to do in the coming months, such as raising the federal debt ceiling and infrastructure might be a bridge too far.

"I am looking to the governors and the state legislatures on infrastructure," says Brazile. "It is not going to happen on the federal level unless they get some help at the state level."

On the upcoming presidential election, Perino says President Trump has a better than 50 percent chance of reelection, given the strong economy and the advantages of incumbency, but "it is not a sure thing."

Brazile expects Joe Biden, Bernie Sanders and one of the under-40-year-old candidates to make it to the final stretch.



# CEO PANEL OFFERS RESTRAINED OPTIMISM ABOUT FEDERAL INFRASTRUCTURE FUNDING BEFORE 2020 ELECTION

Former ACEC Chair Manish Kothari and ACEC President and CEO Linda Bauer Darr moderated a CEO panel that included some of the nation's most powerful infrastructurefocused trade associations.

Only two of the CEOs were confident that Congress would pass major infrastructure legislation this year, but there





was a hopeful consensus that the infrastructure agenda will move forward ahead of the 2020 elections.

"Infrastructure has been elevated to be part of the public discussion," says Stephen Sandherr, CEO of the Associated General Contractors of America.

According to Mike Toohey, president and CEO of the Waterways Council, leadership is crucial to winning increased infrastructure funding. "The president has to provide cover for Congress to raise the gas

tax," he says. "He has to tell the voters that investing in infrastructure is a win for America."

Thirty states have passed gas tax increases in the past five years, which American Association of State Highway and Transportation Officials Executive Director Jim Tymon sees as a positive sign. "The politics of gas tax increases is not falling along traditional partisan lines, and more importantly it has not cost state legislators their seats," Tymon says. "I am hopeful

Congress will look at that and get some courage."

Thomas Kuhn, president of the Edison Electric Institute, talked about the increasing sustainability of the nation's energy infrastructure, saying the industry has cut its emissions by 27 percent since 2005. Looking forward, he forecasts a continuing decline in the use of coal and strong growth in renewable technologies, particularly utility-scale solar. "Investing in infrastructure is green," he says.

On transit, the disruptive

forces of the sharing economy and electrification of transportation are transforming how public transit agencies operate. "Agencies are thinking of themselves in a different light," says Paul Skoutelas, president and CEO of the American Public Transportation Association. "They are becoming the link between citizens and the broader array of services, whether that is transportation network companies, like Uber and Lyft, or car-sharing or bike-sharing or even scooters."



ACEC/South Carolina officials visited Rep. Lindsay Graham, R-S.C., as part of the more than 400 ACEC members who met with nearly 300 congressional offices during the Convention. Pictured back row from the left: Melvin Williams, S&ME; Botts Smith; former ACEC Chairman Peter Strub, TranSystems; and Rick Fauteux, HDR. Front row: Allison King, ACEC/South Carolina; Kylie Page, Insight Group; Graham; Joe Jones, ACEC/South Carolina; and Adam B. Jones, ACEC/South Carolina executive director.



## FUTURIST WARNS OF EXPONENTIAL DISRUPTIONS TO MARKETS, SERVICES, OPERATIONS

Speaking to Convention attendees, futurist Salim Ismail was not shy in sharing his thoughts on how society and humankind will change over the coming few decades.

He forecast that within four years combustion-engine automobiles will no longer be manufactured, solar energy will be capable of powering all global electricity needs within 12 years, and channeling another futurist, the United States will no longer exist within 25 years.

"There is a doubling in the speed of progress across a dozen technologies," says Ismail. "If you do not spot these doubling patterns, you will be left behind.



Convention attendees were allured by a variety of products and services in the Exhibit Hall, which included more than 50 booths from vendors and affiliate members.

Salim Ismail



If you can see it coming, it becomes a tremendous advantage."

He also cautioned that progressing technologies can be destructive as the evolution of what was becomes what is and what will be, while noting how changes have occurred and continue to occur in a variety of societal institutions such as marriage, education, religion, criminal justice, health care and monetary systems.

"This is also an unbelievable opportunity for engineers if you can capitalize on many of those progressing disruptions that affect your industry, such as climate change," Ismail says. ■

> The Capitol Steps' unique brand of political impersonations and parody drew plenty of raucous laughter, including from former ACEC Chairman Ted Williams (above left), with spoofs such as a singing President Donald Trump, with Barack Obama and Hillary Clinton as backup chorus.



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## ENGINEERING EXCELLENCE AWARDS

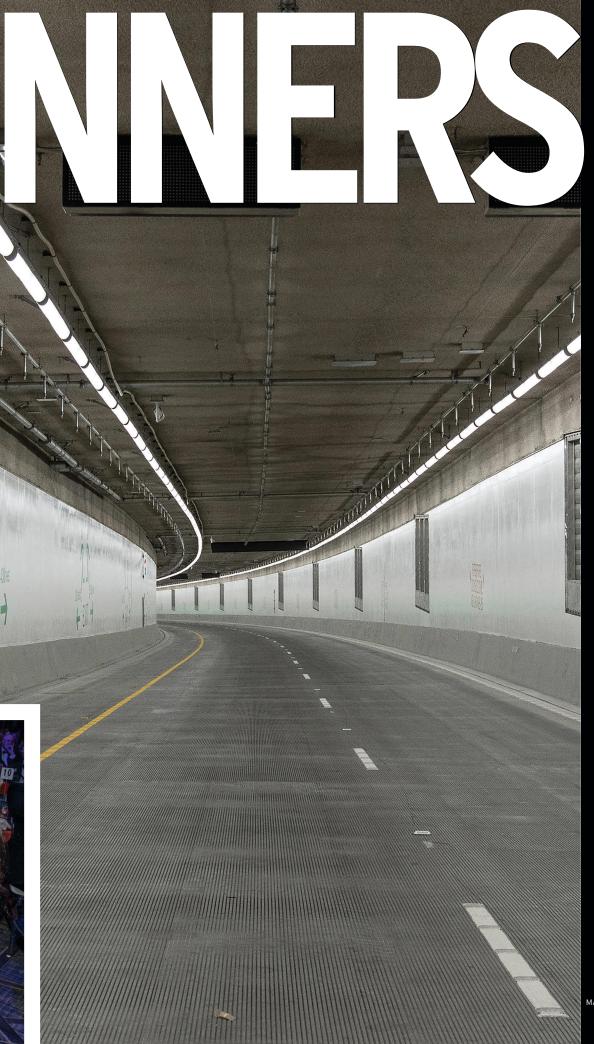
he 2019 Engineering Excellence Awards Gala—known as the Academy Awards of the engineering industry—showcased 196 projects from across the country and throughout the world at a black-tie event on May 7.

A panel of 28 judges representing a wide spectrum of built environment disciplines had selected 36 top winners—including 20 Honor Awards, 16 Grand Awards and a Grand Conceptor Award for the year's most outstanding engineering achievement.

Ross Shafer, a six-time Emmy Award-winning comedian, TV host and nationally recognized motivational speaker, returned to again host the Gala, which was attended by nearly 800 members, guests and dignitaries.







## 2019 Grand Conceptor Award

Alaskan Way Viaduct Replacement Seattle, Washington

**WSP USA** Seattle, Washington

One of Seattle's most seismically vulnerable highways has been replaced with a 1.7-mile underground tunnel containing a state-ofthe-art double-deck highway. Situated 200 feet beneath downtown, the new tunnel has a revolutionary flexible concrete core that combines with its underground location to make it withstand a 9.0 magnitude earthquake. Pioneering ventilation and fire control systems also make the tunnel one of the safest structures of its type in the world. The project eliminates a half-century-old barrier separating downtown from its waterfront, while paving the way for 9 new acres of publicfriendly space.





### Governor Mario M. Cuomo Bridge Tarrytown, New York

**HDR** 

New York, New York

The massive new 3.1-mile state-of-the-art, twin span Governor Mario M. Cuomo Bridge across the Hudson River reduces traffic congestion and frustration for motorists with eight new general traffic lanes, shoulders and bus lanes and a state-of-the-art traffic monitoring system. The \$3.2 billion structure is also designed to accommodate future commuter rail. Innovative roadway lighting uses dark-sky compliant LED light fixtures to reduce light pollution. The highly efficient system requires 75 percent less energy compared with traditional bridge-lighting technology. As the largest bridge in New York State history, the project involved 1,400 companies, created thousands of jobs and used 220 million pounds of U.S.-made steel.



**WSP USA** Arlington, Virginia

Cutting-edge building systems highlight the gleaming new 205,000-square-foot facility for recruit training, track and field competitions and other corps activities. Innovative technologies include a "passive downdraft" heating and cooling system, which uses evaporative cooling and buoyancy to supply outside air to the interior without the use of fans, cutting energy costs by nearly half. Air is induced into the building's four supply airshafts by cooling outside air with a chilled water spray application at the top of a vertical column. Underground cisterns collect rainwater from the roof, providing a renewable water source for irrigation, flush toilets and mechanical system rehydration. In use for over a year, the facility has exceeded expectations in both energy savings and user experience.







### Lake Peachtree Spillway Replacement Peachtree City, Georgia

Schnabel Engineering Alpharetta, Georgia

Innovative design has provided more spillway capacity at the Lake Peachtree Dam while setting a new benchmark for hydraulic design in the U.S. The replacement structure, called a multistaged nonlinear Piano Key Weir, has a unique nonlinear geometry that provides significant higher water capacity in constrained spaces compared with more conventional weirs, yet with lower construction costs and maintenance. The first known application of a multistage Piano Key Weir in the world, the Lake Peachtree project features a new golf cart bridge that offers a vantage point for visitors to admire the new spillway to further enhance Lake Peachtree's status as a community centerpiece.





### **New London Embassy** London, United Kingdom

New York, New York

The new U.S. Embassy in London replaces an outdated structure with a modern, welcoming, secure facility featuring state-of-the-art energy efficiency. The design includes a visually appealing structurally glazed facade that screens solar gain while ensuring a uniform distribution of daylight to the building interior. Also included are a sophisticated water conservation system, high optimization of daylighting and occupant control systems and a network of photovoltaic panels that generate on-site electricity. Embassy visitors seeking passports and visas now take advantage of much larger waiting rooms, privacy booths, comfortable seating and a beautiful view of the Thames River.



**Muller Engineering Company** Lakewood, Colorado

Colorado's first "lid" interchange ends decadeslong safety nightmares for pedestrians seeking to cross U.S. Route 6 amid heavy traffic. After the previous intersection could no longer accommodate the growing multimodal mix of crossing traffic, the project team incorporated an innovative cut and cover lid feature over the lowered highway. The new covered highway, berms and reduced vehicular speeds have since significantly cut noise and emissions from pre-project conditions. The interchange improves safety, and features structural aesthetics and park amenities, which echo the feel of the nearby mountains.









### **Prickly Pear Creek** Realignment East Helena, Montana

**Pioneer Technical Services** Helena, Montana

Resourceful engineering eradicated a toxic threat to groundwater by realigning a natural stream away from the contamination danger. For more than a century, ore processing at a nearby smelter had sent tons of slag and waste products into the Prickly Pear Creek floodplain, causing widespread contamination and major threats to the groundwater. To restore the area's environmental health, the project team removed a nearby dam and lake complex replacing it with a "natural" stream channel that diverts the creek away from a contaminated slag pile. Groundwater levels below the most contaminated soils were permanently lowered, which reduced the extent and magnitude of the groundwater plumes, restored fish passage through the site and reestablished more than 140 acres of wetlands.





### **Infinity Loop** Portland, Oregon

Portland, Oregon

A decades-old dilemma regarding how to load and unload freight trains at a higher rate without affecting freight traffic has been solved and cuts processing time in half. While present unit-train loop tracks can accommodate a single unit train, they cannot efficiently process multiple trains at high rates. The new design wraps outer loop staging tracks, each capable of holding one train, around an interior balloon track. This space-saving layout creates an "infinity" symbol, which allows multiple trains to enter the facility and be loaded or unloaded in quicker succession without conflicting with other trains.



### **Crooked River Wetlands** Prineville, Oregon

**Anderson Perry & Associates** La Grande, Oregon

Constructed for a fraction of the cost of a conventional wastewater treatment facility, the groundbreaking wetlands complex uses natural processes to remove contaminants from reclaimed water. The system provides as much as 2 million gallons per day of clean, cool water that will aid in the reintroduction of steelhead and salmon, as well as offering habitat for numerous plants, wildlife, waterfowl and insects that support a healthy ecosystem. Plant microorganisms in the wetland polish the water, which is cooled as it flows underground into the Crooked River. Since its installation, the system has exceeded stringent permit requirements and has helped pioneer a new, nontraditional approach to address wastewater treatment needs.



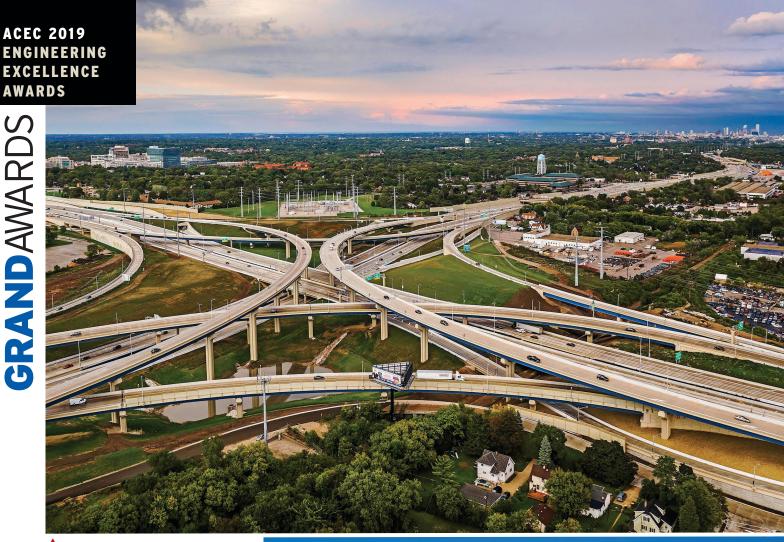




### San Pedro Creek Culture Park San Antonio, Texas

### **HDR/Pape-Dawson Engineers** San Antonio, Texas

Visionary design revitalized a once sacred creek with inspired art, splendid paseos, native plantings and unique plazas—to create an attractive area of respite and cultural reflection. The project team replaced the original concrete streambed with cobble and natural materials to further enhance aquatic habitat and restore the ecosystem that once propagated the creek. State-of-the-art crest gates at a downstream dam control the creek's water surface area and depth. An automated submersible pump speeds the flow of water through the area following major storms to minimize flooding. The resulting creek restoration has also fueled a development renaissance in downtown San Antonio.



### **Zoo Interchange Core and Adjacent Arterials** Milwaukee, Wauwatosa and

West Allis, Wisconsin

### Forward 45

Milwaukee, Wisconsin

The new multimodal intersection is the result of a six-year effort to assure Wisconsin's busiest interchange can effectively handle 21st century mobility demands. The previous intersection had become deteriorated and could no longer accommodate the 350,000 vehicles per day that pass through the interchange. The new design includes 9 miles of freeway and 4 miles of local roads, in addition to pedestrian, transit, car-pooling and bicycle facilities making it the largest multimodal project in the state's history. Critical to the project's success was maintaining access to a major regional medical center, which serves 1 million patients annually, employs 14,000 and serves as the region's only Level 1 trauma center.





**Sarah Mildred** Long Bridge Portsmouth. **New Hampshire** 

Hardesty & Hanover/ FIGG Bridge Engineers New York, New York

The new lift bridge creates a more direct passage for large vessels accessing the nearby port and Portsmouth Naval Yard. The project overcame the challenging Piscataqua River, featuring tidal flows among the highest velocities in the U.S. The design incorporates precast posttensioned segmental concrete towers, the first such use for a lift bridge. While retaining the twolevel concept of the previous structure's approach spans, the center lift span now features rail and roadway on the same level with tracks embedded into the median. The new single-level lift span increases vertical clearance above the river to 56 feet and reduces the number of required bridge openings by more than two-thirds.



### **MIT.nano**

Cambridge, Massachusetts

### **BR+A Consulting Engineers**

Boston, Massachusetts

Groundbreaking engineering has created the nation's largest, most efficient and sophisticated nanotechnology research facility. The 214,000-square-foot building replaces a previous 30-year-old complex that could not support future nano-scale fabrication and imaging research. The new facility houses chemistry and prototyping labs, a two-story virtual-reality and visualization area, an ultra-stable basement level dedicated to electron microscopes and other sensitive imaging tools and two large floors of connected cleanroom spaces. The new facility will support more than 2,000 faculty and researchers every year.



### **Times Square Shuttle Station Reconstruction Study** New York, New York

**WSP USA** 

New York, New York

Imaginative planning research has produced a solution to renovate one of New York City's largest and most congested subway stations. The Times Square Shuttle Station in Manhattan serves over 200,000 passengers daily, but its configuration has long been known to create passenger confusion and congestion, while its curved track alignment results in large platform gaps that preclude this key station from being Americans with Disabilities Act (ADA) compliant. The project team proposed reconfiguring the station to include expanding the station 350 feet further into the existing rail tunnels. It also includes construction of a new 28-foot-wide center platform that provides full access to all riders and the removal of 122 columns along platform edges. The proposed modifications would help the station meet growing passenger demand while dramatically improving service and providing ADA access.





# **Salesforce Tower** San Francisco, California

**Magnusson Klemencic Associates** Seattle, Washington

At 1,070-feet tall, the Salesforce Tower is a structural marvel in having the highest occupied floor of any building in a seismic zone in the Western Hemisphere. It is the tallest building in the world to use only its central core to resist wind and earthquake forces, even though it resides in one of the most volatile seismic hazard locations. All elevators, emergency stairs, restrooms and mechanical systems are encased in a core of high-strength concrete, creating an extremely strong structural spine. The project team's structural design allows for fewer exterior columns to carry the weight of floors to the foundation. Already a commercial success, the new tower will enhance the San Francisco skyline for generations to come.



# **Enhanced Nutrient Recovery Upgrades**

Baltimore, Maryland

**Whitman Requardt and Associates** 

Baltimore, Maryland

One of the world's largest applications of denitrification technology has substantially lowered levels of nitrogen and phosphorous discharged into the Chesapeake Bay. The process involved integration of 52 specially designed denitrification filter cells—among the world's largest—into the existing Back River Water Resource Recovery Plant. Results show the technology reduced the nitrogen and phosphorus load discharged to the Chesapeake Bay by nearly 2 million pounds in the first year of operation. The restoration effort provides an integrated approach to improving water quality in the Chesapeake Bay watershed.



# **Barrington Road at** I-90 Interchange & Park-n-Ride Hoffman Estates, Illinois

Crawford, Murphy & Tilly Aurora, Illinois

Expansion of the Illinois Tollway combined with a dedicated transit component and express bus service created a full access, multimodal interchange. Complementing the multimodal hub is a direct connection with an adjacent 170-space Park-n-Ride Lot, in addition to sidewalks and paths to facilitate accessibility by both pedestrians and cyclists. Coinciding with the ongoing widening of I-90, the interchange eliminates a local traffic choke point and reduces emergency response times to nearby St. Alexius Hospital. The new interchange illustrates how transit and other alternative modes of transportation can be effectively integrated to enhance mobility for all.



# The Promenade of Wayzata Wayzata, Minnesota

LHB/American Engineering and Testing/ Ericksen Roed and Associates/KFI Engineers Duluth, Minnesota

A declining '60s-era mall built over a native wetland has been replaced with a striking new 1.5-million-square-foot mixed-use community that features six distinctive blocks including senior living facilities, apartments, retail, offices, restaurants and a hotel as well as a large community park. Long-term foundation concerns due to a thick underlying swamp and shallow water table were overcome using a cutting-edge "land bridge" design with the buildings, walks, streets and utilities all supported by deep foundations, many of which provide double-duty as "energy piles" that use geothermal energy for heating. The result is a massive network of heated streets and walks, which virtually eliminate cold-season salt use at the site.





# Fred & Pamela Buffett **Cancer Center**

Omaha, Nebraska

HDR

Omaha, Nebraska

The dazzling \$323 million center is highlighted by a 10-story, 98-laboratory research tower in addition to an eight-story, 108-bed inpatient treatment center. The project team overcame site constraints to creatively design building infrastructure that meets stringent energy efficiency mandates while still optimizing operational efficiency, quality of care and patient experience. Additional innovations include highefficiency boilers that will save nearly \$1 million in energy costs, a centralized uninterruptible power supply, and a distributed networkbased lighting control system that adjusts illumination levels according to occupancy, time scheduling and daylight harvesting.



# Minnesota 210 Design-Build **Flood Repair** Carlton, Minnesota

**Barr Engineering Company** Minneapolis, Minnesota

A scenic section of Highway 210 is once again being enjoyed by travelers after historic rainfall in 2012 caused major slope failures and extensive roadway damage. The project team restored 74 slopes along a 3.5-mile stretch of the highway while overcoming steep terrain accommodating the area's unique geologic and groundwater characteristics. Innovative measures and vegetation were used to conceal many slope repairs to reclaim the route's natural appearance. Monitoring instrumentation invented specifically for the project provides real-time erosion analysis while advancing the practice of slope monitoring in remote project locations.







# Swan Lake Reservoir Expansion Project

North of Ketchikan, Alaska

**McMillen Jacobs Associates** 

Boise, Idaho

Accessible only by boat, plane or helicopter, Swan Lake Reservoir's capacity was still increased allowing for more storage from spillway flows. Located in proximity to the 25-megawatt Swan Lake Hydroelectric facility—a major power provider for southeast Alaska—the reservoir capacity level was raised from a normal full pool elevation of 330 feet to 345 feet. The project's design included a 23-foot-wide vertical operating gate, a 30-foot-tall concrete pier and a 78-foot-long flashboard gate system across the spillway. The modifications significantly lower energy costs and increase energy security for power users, clients and the community.



# 53 West 53rd Street Tower New York, New York

**WSP USA** 

New York, New York

The eye-catching yet strikingly slender 1,050-foot-tall tower also features cuttingedge structural innovation. The pyramidal-appearing form incorporates an imaginative yet resilient structural diagrid system to support its uniquely intricate exterior. While the building's north and south facades taper at gently shifting inclines, the envelope to the east and west are vertical. The design results in the diagrids "meandering" along the facades and creates distinctive views for occupants. The complex also houses 728,000 square feet of ultraluxury residential condominium apartments with amenities such as a 65-foot-long lap pool, wellness center, wine vaults and 65,000 square feet of additional gallery space for the Museum of Modern Art.







# **Aquifer Storage and Recovery Wells**

Woodland, California

**Carollo Engineers** 

Sacramento, California

Creative engineering is helping a water-challenged city transition from sole dependence on groundwater to higher quality treated surface water from the Sacramento River. With groundwater supply challenged by stringent water quality requirements and drought conditions, the project team designed two aquifer storage and recovery wells capable of accommodating 325 million gallons of drinking water. Treated surface water is injected into the wells when demand is low, then extracted during higher demand periods. The cutting-edge process eliminates the risk of overusing wells while also improving water quality and lowering costs to residents. The project is the fastest of its type ever implemented in the U.S.





# **Automated People Mover and ConRAC** Tampa, Florida

Walter P Moore/Gresham Smith/ **Master Consulting Engineers** Tampa, Florida

Known as SkyConnect, the 1.4-mile, three-station Automated People Mover (APM) provides fast, safe and sustainable transportation for Tampa International Airport's steadily increasing passenger volume. Similarly, the 2.44-million-square-foot consolidated rental car facility (ConRAC) offers state-of-the-art rental car operations, which previously had been operating in cramped, near-capacity facilities. Effective combinations of precast and cast-in-place concrete, and structural steel solved challenges such as the APM's horizontally curving rail spans of more than 250 feet long and stations located 120 feet above existing roads. Together, the APM and ConRAC will eliminate nearly 3 million vehicle trips on airport roads and 1,600 tons of carbon emissions each year.



# Allison Creek Hydroelectric Design-Build Project Valdez, Alaska

# McMillen Jacobs Associates

Boise, Idaho

The new 6.7-megawatt hydroelectric facility significantly reduces Valdez's reliance on diesel fuel generators. The project team's design overcame a host of environmental, safety and public health concerns, including impact on operations at the nearby Valdez Marine Terminal, the terminus of the Alaska Pipeline System. The project includes an innovative concrete gravity dam with a penstock system that delivers water 1.25 miles to a power generation plant. Because of a 1,200-foot elevation drop in the penstock system, the design was refined to accommodate changes in water pressure. Sections of the penstock were buried to protect from freezing and avalanches and to minimize impacts to wildlife. The project reduces diesel fuel costs annually by \$2.4 million and eliminates 12,000 tons of carbon dioxide emissions.



# I-70 Mountain Corridor Eastbound Express Lane Idaho Springs, Colorado

### **HDR**

Denver, Colorado

A new express lane delivers much-needed congestion relief, improves travel reliability and dramatically reduces times to clear emergencies. Located between U.S. Route 40 at Empire Junction and the Veterans Memorial Tunnels, the project required the complete overhaul of two major interchanges critical to the economic viability of Idaho Springs, with a mandate of minimal disruption to motorists. An innovative accelerated bridge design cut construction time in half on one interchange, while the second interchange required a full reconstruction but remained in use. A complete parallel bridge replacement and ramps were constructed before taking the existing interchange offline for upgrades.





# Niagara Falls State Park **Transformation Initiative** Niagara Falls, New York

T.Y. Lin International Rochester, New York

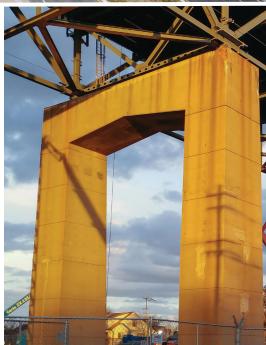
Years of disrepair, undersized overlooks, antiquated systems and inadequate pedestrian circulation have all been remedied with a new park worthy of its international renowned name as a premier tourist attraction. Everything—attractions, infrastructure, buildings, parking facilities, lighting systems, pedestrian and vehicle circulation routes, and behind the scenes utility, mechanical, electrical, irrigation and stormwater systems—has been upgraded with state-of-the-art technology. Spanning across more than 400 acres, the \$65 million transformation initiative succeeds in improving public access and experience to the wonderment of Niagara Falls.



# American Center for Mobility Ypsilanti, Michigan

WSP Michigan/HNTB Michigan/Mannik & **Smith Group/NTH Consultants** Detroit, Michigan

The new center is a first-of-its-kind nonprofit testing, education and product development center for connected and automated vehicles. An innovative slab foundation system for bridge abutments and superstructures minimized excavation needs for the 330acre center. Advanced intelligent lighting and traffic signals, along with flexible urban environment configurations, help provide researchers with unlimited options to test and validate automated vehicle system performance. The new center will play a key role in ensuring that connected and automated vehicles can be safely integrated into the nation's transportation network.

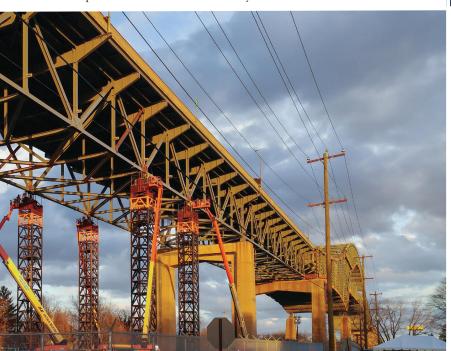




# **Delaware River Bridge Emergency Response** Bristol, Pennsylvania

# **Michael Baker International** Harrisburg, Pennsylvania

The discovery in January 2017 of a full-depth fracture in a truss unit on the Delaware River Bridge's Pennsylvania approach forced an immediate closure of a critical crossing in the local and regional transportation network. Tasked with engineering a fast-track fix, the project team used innovative ultrasonic material testing to evaluate the condition of other trusses and bridge components with similar design and load characteristics. No additional problems were revealed. This innovative testing approach, the largest ever application for a steel bridge in the U.S., helped expedite repairs and certify the structure's overall safety. The bridge was reopened just under two months later and illustrates how advanced testing technology and practices can aid in the rapid evaluation and restoration of key infrastructure.





# **eBART to Antioch: East Contra Costa Extension** Pittsburg, California

# PGH Wong/AECOM/Ghirardelli/MNS/SAMJV Oakland, California

A new eBART extension helps bring much-needed relief to a highly congested highway corridor. The new rail service in East Contra Costa County (California) now connects Pittsburg to Antioch and eases common bottlenecks on State Route 4 (SR-4). The project included 10 miles of tracks extending east in the median of SR-4, two new stations, a parking lot and a train maintenance and operations facility. Built in conjunction with a SR-4 widening project, the combined projects represent approximately \$1 billion invested specifically in that corridor. The eBART trains meet strict emissions standards by using renewable diesel, an advanced biofuel produced from sources such as vegetable oil. Ridership on the new eBART extension is already more than double agency projections.





# **Delaware Memorial Bridge Cable Dehumidification**

New Castle, Delaware

## **AECOM**

Wilmington, Delaware

An innovative dehumidification system is helping preserve massive steel cables supporting the Delaware Memorial Bridge's main spans and help prevent loss of structural integrity. After corrosion on support cables was discovered on the twin 3,650-foot-long suspension bridges, the project team designed an innovative dehumidification system specifically tailored for the bridge's cables to reduce effects of relative humidity and extend component service life. This is only the second application of this technology in the U.S., although five more major U.S. suspension bridges are expected to have dehumidification systems for cables within the next few years.



# **Riverside Drive and Gathering Place** Tulsa, Oklahoma

**HNTB** Oklahoma City, Oklahoma

In preparation for a largescale, \$400 million park along the Arkansas River, the city of Tulsa first needed to overcome several infrastructure challenges, including stormwater flooding, aging water and sewer lines and safety issues with Riverside Drive. The project team incorporated an accelerated design effort that delivered numerous infrastructure upgrades, including all utility relocations and right of way acquisitions, resulting in the site being ready for construction in less than a year. Within three years, the old undeveloped floodplain had successfully morphed into land bridges, skate parks, landscaped greenways and other amenities that provide Tulsa with a new source of community pride.







# **Murray Wet Weather Facility** Seattle, Washington

Bellevue, Washington

Creative incorporation of a new wet weather facility has eliminated prevalent combined sewer overflows after severe weather. Major rain events had frequently overwhelmed the 60-year-old Murray Avenue Pump Station, often resulting in untreated overflows of combined storm and sanitary sewage flowing untreated into Puget Sound. The design solution featured a unique circular 1 million gallon storage tank that stores excess sewage when storm events exceed the pump station's capacity. Afterward, the stored stormwater is gradually released to the pump station to be conveyed to a treatment plant. Located on a steep slope overlooking Puget Sound, the mostly underground tank successfully blends into the surroundings.







# **Westminster Station Park**Westminster, Colorado

Muller Engineering Company Lakewood, Colorado

A badly neglected creek corridor has been transformed into an enticing 40-acre oasis with a shimmering pond, green play lawns, mammoth boulders and trails winding beside a flowing creek bordered with trees. The project team fulfilled the vision of local officials in creating a mountainlike open space park in an urban area while at the same time providing a hub for a 75-acre transitoriented development where a transit station, residences, businesses, entertainment and other services are all within easy walking distance. New park facilities include an arts center, amphitheater, boating pond, treehouses, multiple picnic areas and playgrounds crafted out of natural materials.



# Permanent Sheet Pile Wall, Pennsylvania Turnpike

West Deer/Indiana, Hampton Townships, Pennsylvania

#### Earth, Inc.

Pittsburgh, Pennsylvania

Resourceful engineering design has created a new sheet pile retaining wall system that results in significant cost and time savings compared with current retaining wall options. The 1,573-foot-long, permanent sheet pile retaining wall system was first used during embankment widening for the Pennsylvania Turnpike. The new wall system includes nearly 2,000 tons of steel to construct the exposed wall face and its underlying network of resistance sheets. In addition to being less costly than conventional retaining wall systems, the alternative design is also easier to build. The turnpike's entire sheet pile system was completed in six months, almost half the time for a mechanically stabilized earth retaining wall and without the need for temporary shoring.



# Vancouver Waterfront Park Vancouver, Washington

# **BergerABAM**

Portland, Oregon

The main jewel of a \$1 billion waterfront revitalization program, the new 7.3-acre park, replaces a century-old brownfield site that for years separated the community from the scenic Columbia River. The project required extensive shoreline restoration, and environmental planning and permitting. The new park features plazas, terraces, open lawns, playground and picnic areas and an urban beach. A unique one-sided, cable-stayed structure called the Grant Street Pier carries visitors over the Columbia River nearly 100 feet with no in-water elements. The park is expected to fuel a revitalized waterfront, with 3,000 new residential units and 1 million square feet of mixed-use space already planned.



# **NATIONAL RECOGNITION AWARD WINNERS**

FIRM NAME	PROJECT NAME	FIRM NAME	PROJECT NAME
ACEC/ALABAMA Building & Earth Sciences Sain Associates	The Vesta Apartments Geotechnical Engineering Dunnavant Square Pedestrian Tunnel	ACEC/GEORGIA  NOVA Engineering & Environment/ Stevens & Wilkinson Parsons Corp. Schnabel Engineering	Sweetwater Ruins at Sweetwater Creek State Park Northwest Corridor Express Lanes Lake Peachtree Spillway Replacement
ACEC/CALIFORNIA			1 , 1
ACEC/CALIFORNIA BKF Engineers	San Pablo Avenue Bike and Pedestrian Improvements	ACEC/HAWAII Fukunaga & Associates	Ala Moana Wastewater Pump Station Force Mains 3 & 4
Carollo Engineers Carollo Engineers	Aquifer Storage and Recovery Wells Southeast Surface Water Treatment Facility	ACEC/IDAHO McMillen Jacobs Associates	Allison Creek Hydroelectric
GHD  Kjeldsen, Sinnock & Neudeck	Redwood Business Park and Talmage Interchange Wallace Weir Fish Rescue Facility	McMillen Jacobs Associates McMillen Jacobs Associates	Design-Build Project Esther Simplot Park Swan Lake Reservoir
PGH Wong/AECOM/ Ghirardelli/MNS/SAMJV	eBART to Antioch: East Contra Costa Extension	POWER Engineers Stanley Consultants	Expansion Project Kizildere-3 Geothermal Power Plant Boise River Greenbelt
San Diego Gas & Electric/NV5  Syska Hennessy Group	Sycamore to Peñasquitos 230kV Transmission Line Maintenance & Operation Facility	Stanley Consultants	Pathway Reconstruction I-15, I-86 System Interchange Value Planning Study
Towill  ACEC/COLORADO Felsburg Holt & Ullevig	San Andreas Pipeline No. 2  State Highway 9 Iron Springs	ACEC/ILLINOIS Clark Dietz	MCORE - Transforming the Core of the Community
HDR Martin/Martin	1-70 Mountain Corridor Eastbound Express Lane 1144 Fifteenth	Crawford, Murphy & Tilly Crawford, Murphy & Tilly	Barrington Road at I-90 Interchange & Park-n-Ride Sugar Creek Wastewater
Martin/Martin Muller Engineering Co.	Canvas Stadium Linking Lookout: U.S. 6th and 19th Street Interchange	HNTB OMEGA	Treatment Plant Wilson Transfer Station Inbound I-55 at U.S. 41
Muller Engineering Co. Wilson & Co.	Westminster Station Park I-25/Cimarron Interchange— The Gateway Project	Stantec/WSP USA	(Lake Shore Drive) Interchange Albany Park Stormwater Diversion Tunnel
ACEC/CONNECTICUT Michael Baker International RACE Coastal Engineering	Hartford Line Station Design Fort Nathan Hale Pier Project	ACEC/INDIANA Strand Associates	City of Columbus People Trail Extension
WSP USA/STV  ACEC/DELAWARE	New Haven-Hartford-Springfield Rail Program	ACEC/IOWA HNTB	Iowa City Gateway - Park Road Bridge & Dubuque Street
AECOM	Delaware Memorial Bridge Cable Dehumidification	IIW	Upper Bee Branch Creek Restoration GIS Application Solution for
Rummel, Klepper & Kahl	Lane Extension Results in Major Improvements	Ulteig Engineers	Energy Distribution
ACEC/FLORIDA RADISE International/ Smart Structures	Tamiami Trail Bridge Life Cycle Monitoring	ACEC/KANSAS Burns & McDonnell	Bridge Raising in Sumner and Sedgwick Counties
Walt Disney Imagineering/ Walter P Moore Walter P Moore/Gresham Smith/	Pandora - The World of Avatar  Automated People Mover and	George Butler Associates HNTB	I-135 Canal Route Bridge Repair - Phase I Kansas Turnpike Open Road
Master Consulting Engineers	ConRAC	ACEC/KENTUCKY	Tolling Conversion
		American Engineers Bacon Farmer Workman Engineering & Testing	Mammoth Cave Echo River Trail Reconstruct I-24/I-69 Interchange
		EA Partners Michael Baker International QK4	A Safer Path The Lake Bridges Churchill Downs - Sustainable Water Quality Infrastructure
		QK4	Kentucky's Touchstone Energy Cooperative - PowerVision
The Jeremiah Morrow Bridge, locate	d in Oregonia, Ohio, was designed by	ACEC/MARYLAND Gannett Fleming Whitman, Requardt and Associates	Bel Air Impoundment Back River Water Resource Recovery Facility

FIRM NAME	PROJECT NAME	FIRM NAME	PROJECT NAME
ACEC/MASSACHUSETTS		ACEC/NEW JERSEY	
BR+A Consulting Engineers	MIT.nano	AmerCom	U.S. Route 206 Bridge Replacement
GZA	Upper Roberts Meadow Reservoir Dam Breach and Stream Restoration	Control Point Associates	in 9 Days Burlington-Bristol Bridge Scan and Model
Jacobs Engineering Group	New Airport Taxiway with CAT III Landing System	Dewberry Engineers Gannett Fleming	Interchange 163 Improvements N.J. Turnpike Interchange
Nitsch Engineering Parsons Corp.	MIT North Corridor Fore River Bridge	HNTB	14A Improvements Open Road Tolling
Simpson Gumpertz & Heger STV	Underground Transmission Line Longfellow Bridge Rehabilitation	Jacobs Engineering Group	Implementation 5 Bridges Conrail Penns Grove Siding Track
Tetra Tech	Liberia Municipal Water Program	Langan Engineering and Environmental Services	700 Jackson Redevelopment and Resiliency Park
ACEC/METRO WASHINGTON		T&M Associates	Berkeley Island County Park
Alpha Corp.	Gateway Arch National Park Program Management	WSP USA	Cedar Bonnet Island Habitat Restoration Plan
A. Morton Thomas and Associates Arup	The Wharf - Phase I New London Embassy	ACEC/NEW MEXICO	
M.C. Dean	"Rain" - M Street Underpass Art Park	North GeoEngineering Services	Excavation Support Design/ I-25 Bridge Widening
Nitsch Engineering	Kennedy Street Green Infrastructure Challenge	ACEC/NEW YORK	
Sheladia Associates	WMATA Paint Booth at Landover Bus Garage	AKRF	American Copper Buildings Stormwater Detention
WSP USA	Virginia Military Institute Corps Physical Training Facility	Arcadis U.S.	Polyfluoroalkyl Substances Treatment Plant
ACEC/MICHIGAN		Arup	Hunter's Point South, Phase 2
Beam, Longest and Neff	GHIB Acquisition +	Arup C.T. Male Associates/	The Bloomberg Center Precise Interior/Exterior Control
Benesch	D4 Engineering Consulting I-75 over the Rouge River	Landscape Architecture & Geology	
NTH Consultants	Using Horizontal Directional Drilling to Mitigate Sinkhole Risks	Cameron Engineering & Associates	Clean & Green Biosolids Processing Facility
Ruby + Associates	New GM Truck Manufacturing Facility	Cameron Engineering & Associates	Randall's Island Water Reclamation Project
WSP Michigan/HNTB/Mannik and Smith Group/ NTH Consultants	American Center for Mobility	CDM Smith Dewberry	Queen Ditch Restoration Project NYC Climate Resiliency
ACEC/MINNESOTA		Ecology and Environment	Design Guidelines Radiological Soil Sorting
AKF Group	Westminster Presbyterian	Engineering and Geology	Pilot Study
Barr Engineering Co.	Church Renovation Minnesota 210 Design-Build	Hardesty & Hanover	Grand Central Parkway Interchange Reconstruction
LHB/American Engineering Testing/	Flood Repair The Promenade of Wavzata	Hardesty & Hanover HDR	Johnson Street Bridge Governor Mario M. Cuomo Bridge
Ericksen Roed and Associates/ KFI Engineers		Jaros, Baum & Bolles	Helen L. and Martin S. Kimmel Pavilion
Mattson Macdonald Young	Minneapolis Armory Renovation	LaBella Associates	Rochester Train Station
Short Elliott Hendrickson Short Elliott Hendrickson/	Nine Mile Creek Regional Trail St. Anthony Parkway Bridge Over BNSF Northtown Yard	LERA Consulting Structural Engineers	Martin S. Kimmel Pavilion
Parsons Corp.	PIASI, MOUNTOWN 1810	Parsons Corp.	Goethals Bridge
ACEC/MISSOURI Anderson Engineering	Cassville School Flood	Stantec	Replacement Project Martin Luther King Jr. Memorial Park Improvements
Burns & McDonnell	Mitigation Project US-169/I-70 North Loop	STV	World Trade Center Cortlandt Street Subway Station Reconstruction
Civil Design IMEG	PEL Study Remapping Data Collection The Museum at the Gateway Arch	Syska Hennessy Group T. Y. Lin International	Legacy West Campus Niagara Falls State Park Transformation Initiative

**IMEG** The Museum at the Gateway Arch

**ACEC/MONTANA** 

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FIRM NAME PROJECT NAME

I-71 at MLK Drive

Jeremiah Morrow Bridge

Lakefront West - Mainline

Hamilton Road Widening

Hefner Water Treatment Plant

Facility Phase 2 Upgrades

Capacity Increase

Fairhill-MLK Green

Sludge Handling

Water Reclamation

Riverside Drive and

Gathering Place

Infinity Loop

Crooked River Wetlands

Alpine Avenue Reconstruction

West Vancouver Freight Access

MP 242 to MP 245 Roadway Reconstruction and Widening

Permanent Sheet Pile Wall

Reconstruction Project

U.S. 301 Connector

I-95/U.S. 301 Interchange and

Delaware River Bridge Emergency Response

(I-676) Bridge

Positive Train Control for SEPTA

Route 30 Landslide Remediation

Wastewater Treatment Plant Upgrades

Ambassador Project

Dublin Road Water Plant Treatment

ACEC/OHIO

HDR HNTB

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Knoxville's Old City
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BNSF Railway Bridge
Capitol Connector Tunnel
Crosstown Concourse
Vicksburg 115kV
Improvement Project

Improvement Project Cumberland Avenue Corridor Project

Edmond Elevated Storage Tower Upper Brushy Creek Dam 7 Modernization Project San Pedro Creek Culture Park FIRM NAME

Jones | Carter JQ Engineering

Lockwood, Andrews & Newnam

RPS

Walter P Moore

PROJECT NAME

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Zachry Engineering Education Complex University Boulevard Extension Repair & Revitalization of

Washburn Tunnel Hurricane Harvey Emergency Flood Modeling

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A. Morton Thomas and Associates

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HDR Johnson, Mirmiran & Thompson Mason & Hanger

STV VHB U.S. 460 Bypass Interchange Central Vehicle Wash Facility and TEMF Complex Bridge Street Pump Station Weight Restricted Bridge Crossings

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The Thrasher Group

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rorward 45

**Short Elliott Hendrickson** 

Strand Associates

Vancouver Waterfront Park
East Link Extension Spring District 120th Station
Restoration of the Mariposa Grove
of Giant Sequoias
Henderson Combined Sewer
Overflow Reduction
Murray Wet Weather Facility
Wildfire Transmission Line
Risk Assessment
Yesler Way Bridge Reconstruction
SR 520 West Approach Bridge North
Salesforce Tower
Alaskan Way Viaduct

Wastewater Treatment Plant Upgrade

Zoo Interchange Core and Adjacent Arterials Lower Yahara River Trail Construction Wastewater Treatment Plant Improvement

Replacement Program



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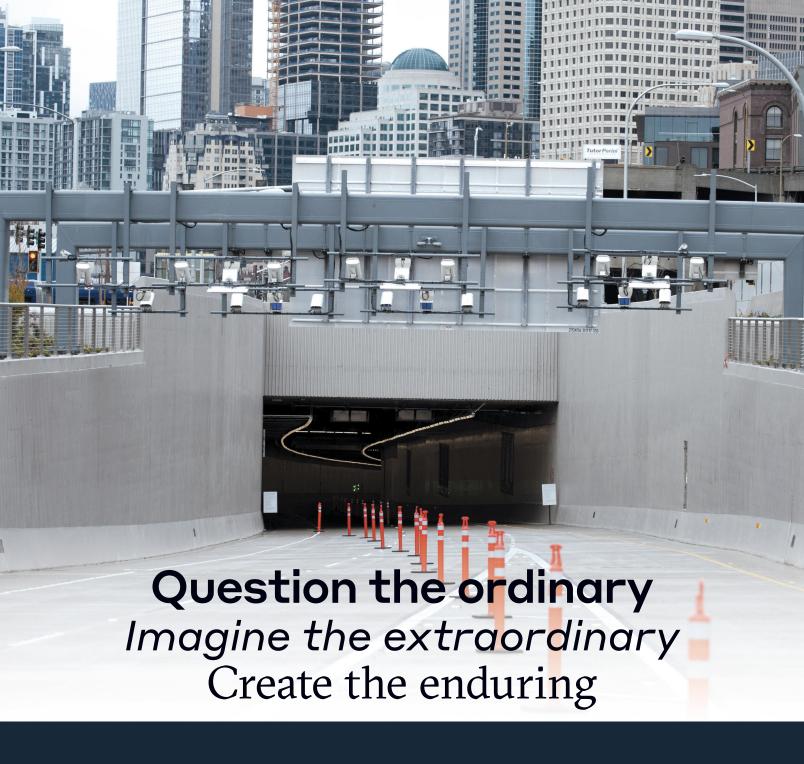
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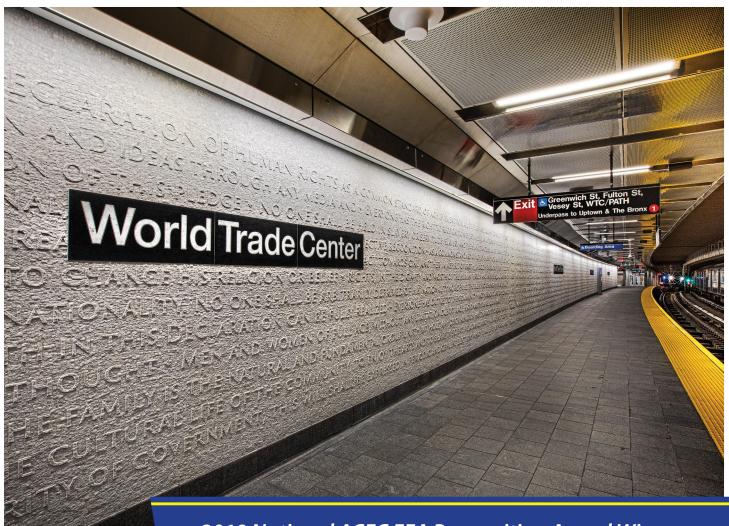
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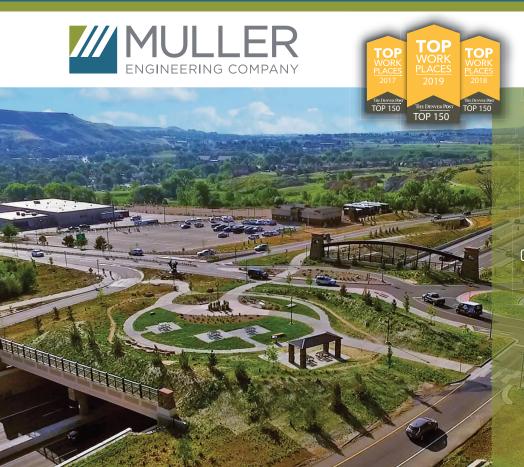
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Stream Design



Stormwater Management



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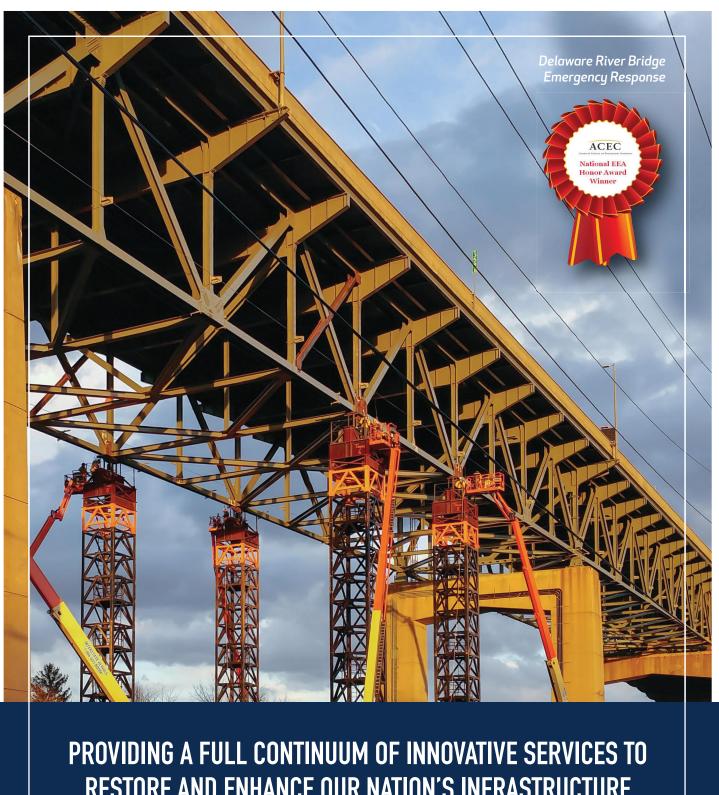
Bridge and Structure Design



Trail Design



Program Management







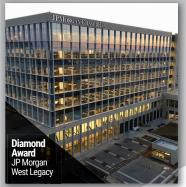


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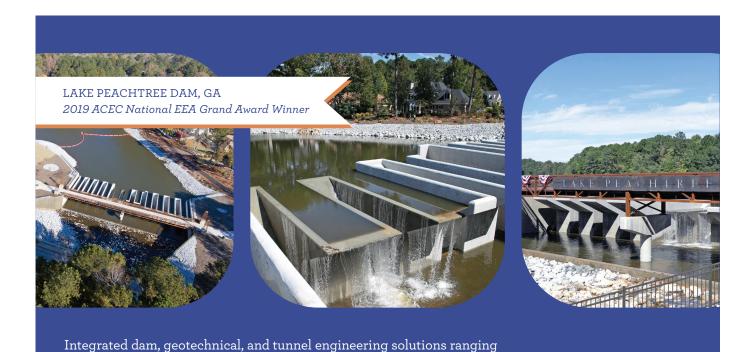






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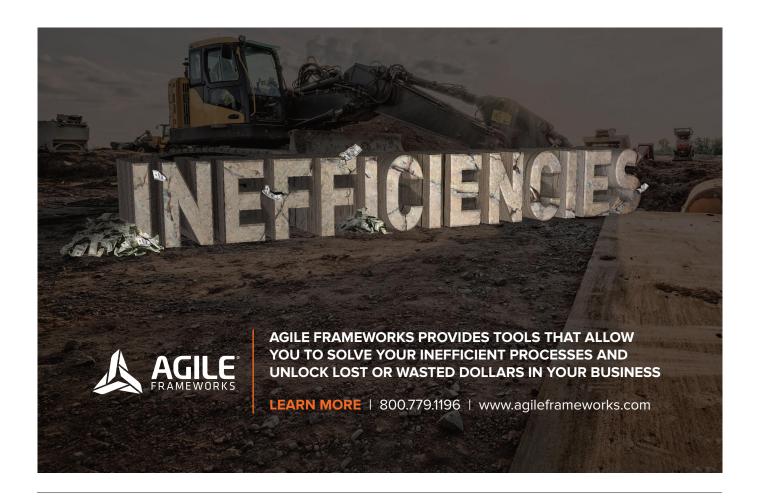




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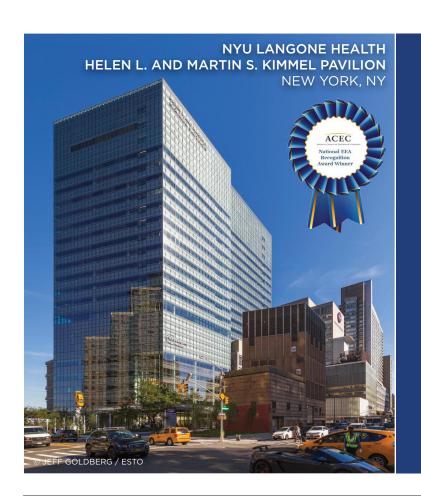
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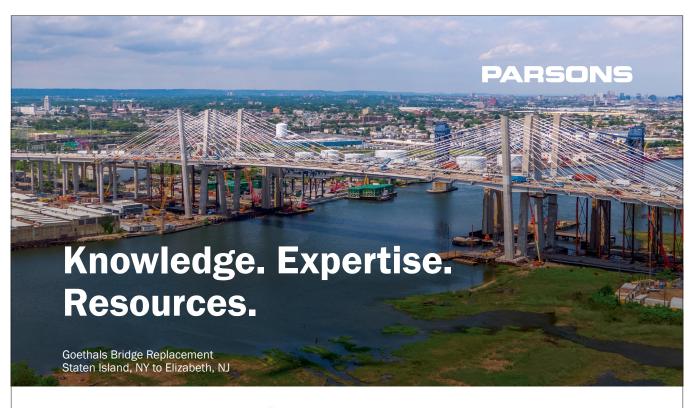


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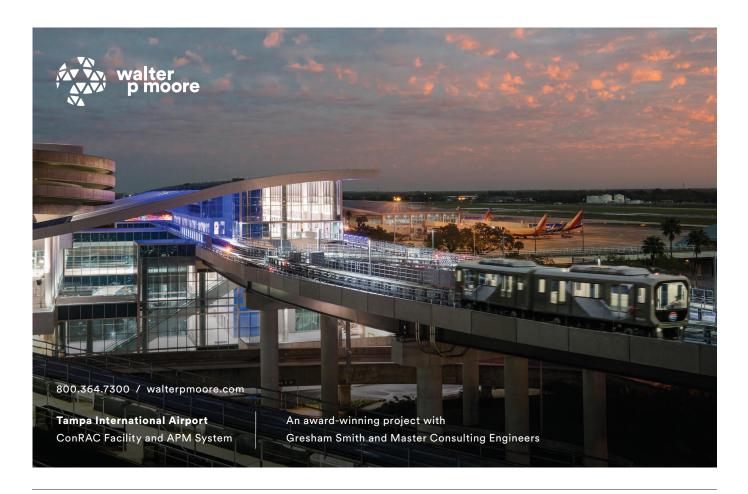
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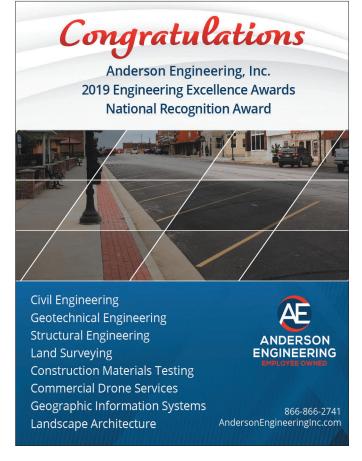
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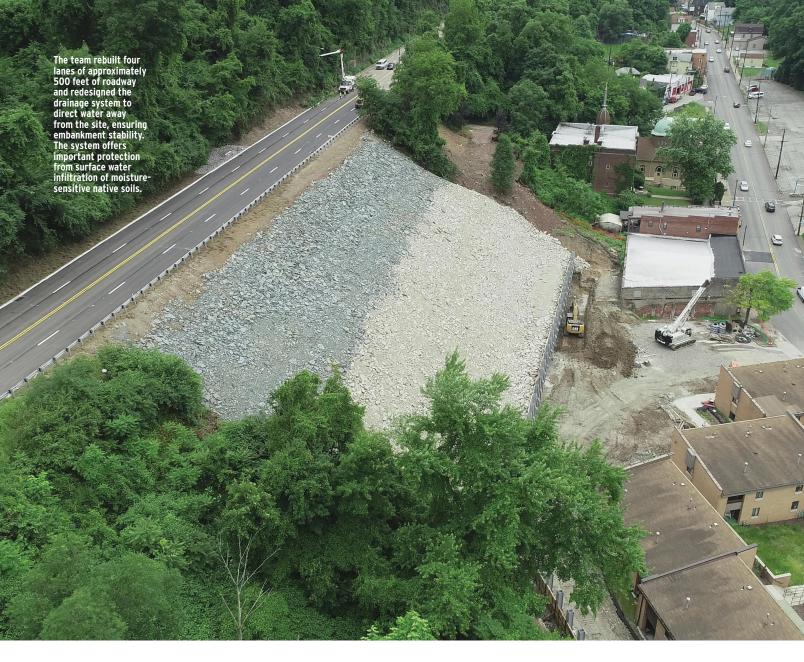












Less than three months later, the damage stemming from those issues, and a subsequent landslide that destroyed three buildings, will have already been remediated—designed, executed and delivered ahead of schedule.

But when, Brian Heinzl, project manager at Gannett Fleming's Pittsburgh office, arrived on the scene April 4, 2018, after the call from District 11, the stretch of U.S. Route 30 east of Pittsburgh had about 1 foot of displacement.

"There was a sewer crossing there, so we thought the pipe had broken and was piping soil away from the road," Heinzl says.

Based on that assumption, PennDOT closed the westbound lanes of Route 30 but kept the eastbound lanes open.

The next day, PennDOT and Gannett Fleming tried to determine whether a broken pipe was indeed the source of the problem. A PennDOT contractor guided a video camera through the pipe, but the search hit a roadblock when Heinzl realized the drawings in utilities records were from 1934 and no longer accurate.

Meanwhile, the road surface continued to buckle. When Heinzl returned to the site on April 6, he found it had subsided by 2 to 3

feet in places. What's more, the retaining wall on the slope below the road was displacing. When Heinzl inspected it two days earlier the wall had been solid.

"It was broken in a spot, rotated about the top and some adjacent remnant building foundations had started breaking," he says. "I realized the slope was moving at an alarming rate, and failure of the wall was imminent."

Heinzl alerted PennDOT engineers who immediately closed Route 30 in both directions and evacuated 31 residents from apartment buildings and other structures downslope from the retaining wall.

"Our intention was to excavate material from the road surface and unload the wall that was failing," says Heinzl, "but we did not get that far."

PennDOT District 11, which encompasses Allegheny, Beaver and Lawrence counties in Western Pennsylvania, is prone to land-slides. Straddling the Appalachian Mountains, it is characterized by steep slopes and deep valleys. The sedimentary rock formations, including weak claystone units, are prone to weathering and loss

of strength. Making matters worse, the region had record amounts of rainfall in 2018.

Gannett Fleming's familiarity with the local terrain and its more than 25 years of work with PennDOT would prove critical on the morning



"Typically for a job like this, even under emergency conditions, three months of design would be more in the realm of possibility."

> BRIAN HEINZL PROJECT MANAGER GANNETT FLEMING

of April 7 when the retaining wall catastrophically failed. Three hundred feet of roadway and thousands of tons of soil plummeted 90 feet down the steep hillside, destroying two apartment buildings and a single-family home.

## **DESIGNING THE NEW WALL**

Route 30, which winds east-west through the district, is a critical commuter route for Pittsburgh. On an average day, 30,000 vehicles would cross the location of the landslide. With no easy detours, having the road out of commission majorly inconvenienced the entire region.

Gov. Tom Wolf toured the site soon after the slide and emphasized the need to open the road as soon as possible. At the time of the governor's visit, Gannett Fleming engineers were already well into the initial phase of project design.

Immediately following the landslide, PennDOT, Gannett Fleming and other contractors were on-site to ensure the slope was not going to move any farther and that everyone had been

evacuated from the buildings below. Once the site and surrounding areas were secure, excavation started immediately.

"First, we had to determine how much we could safely excavate," says Heinzl. "We ascertained the slide was in a confined ravine, so we could move most of the debris and soil without impacting adjacent properties."

Because it was necessary to clear the site right away, Gannett Fleming engineers could not wait for the approximately 35,000 cubic yards of debris to be removed before beginning geotechnical investigations and analysis. Furthermore, they could not wait to complete the analysis before designing the new retaining wall.

Heinzl and his team used available LiDAR imaging to determine the surface contours of the site and utilized a drone to provide 3D aerial photogrammetry. The preliminary design and location of the new wall were based on this information.

At the direction of the engineer, excavators removed debris from specific areas in order to allow drill rigs to access critical core sample borings along the anticipated alignment of the wall.

"We had to make educated design assumptions that turned out



to be pretty close," says Heinzl. "We came up with a model, and then when drilling crews brought up soil and rock samples, our inspectors took photos and texted them to the office to confirm actual subsur-



"It was a very aggressive construction schedule, getting that amount of work done in such a confined space."

JOHN KOVACS
EXECUTIVE VICE PRESIDENT
GANNETT FLEMING

face conditions, and we made changes on the fly."

# **DESIGN PACKAGE DELIVERY**

On April 16, just 10 days after the landslide, Gannett Fleming delivered the design package to PennDOT. The package included design-build plans for the roadway surface and drainage repairs; details for excavation and benching to remove the landslide material and replace it with a durable rock embankment; final structure plans for a 400-foot-long, 20-foot-high anchored soldier pile and lagging retaining wall; and special provisions for PennDOT to advertise the project for bid.

"That's the fastest we've ever done it," says Heinzl.

"Typically for a job like this, even under emergency conditions, three months of design would be more in the realm of possibility."

The project budget was \$6.5 million, and the scheduled completion date was June 30.

"Gannett Fleming was utterly incredible," says Cheryl Moon-Sirianni, a district executive for PennDOT. "They had to make a lot of assumptions, but they've worked on a lot of our remediation projects and have a really good handle on the geology in the region."

Concurrent with the design process, Golden Triangle Construction—one of PennDOT's primary contractors in the district—jumped in without hesitation. Based upon preliminary contacts made by Gannett Fleming, the contractor found a supplier that had the 51 steel beams required for the retaining wall.

"The contractor understood the importance of

the project, so they took a gamble and locked up the steel prior to getting the bid," says Moon-Sirianni.

Over the next two weeks, the steel beams were transported from Richmond, Virginia, to a fabrication shop 25 miles north of Pittsburgh and then to Columbus, Ohio, to be galvanized. Moon-Sirianni estimates the contractor's initiative significantly reduced the procurement process.

# **ROUTE 30 REOPENED**

Because of their assumptions, Heinzl and his team had to adapt the plans for Route 30 as new information and data became available. When data from the final boring showed







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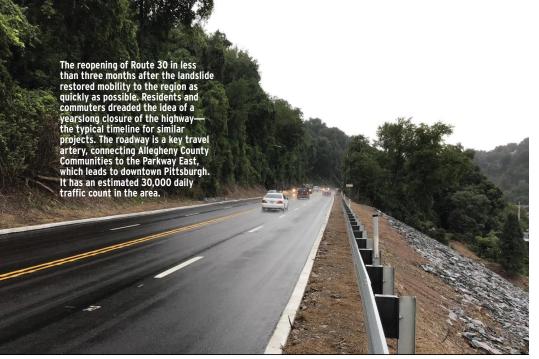
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an unexpected absence of the targeted foundation sandstone, the team redesigned a 75-foot section of the wall within a few hours, lengthening the support beams by 10 feet and specifying the replacement of existing landslide-prone soils with granular material that would lighten the lateral forces on this section of the wall.

"It was a very aggressive construction schedule, getting that amount of work done in such a confined space," says John Kovacs, executive vice president for Gannett Fleming. "PennDOT, Gannett Fleming and the contractor were there around the clock. By Mother's Day, we were testing anchors."

On June 27, only 81 days following the landslide and three days ahead of schedule, Route 30 was reopened.

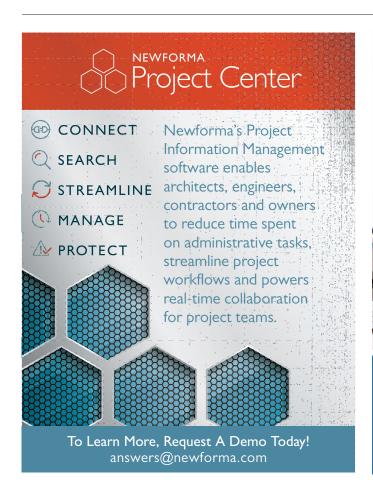
"If this had been a 'normal' slide, without the emergency approval process, it would have taken two years to get the road reopened," says Moon-Sirianni.

In addition to completing the entire project scope in a short window of time, final cost for the project was

within 1 percent of the budget.

"It was a great example of the value of a strong partnership among the engineer, owner and contractor," says Kovacs.
"Everyone was unified and worked really well together."

**Gerry Donohue** is ACEC's senior communications writer. He can be reached at gdonohue@acec.org.





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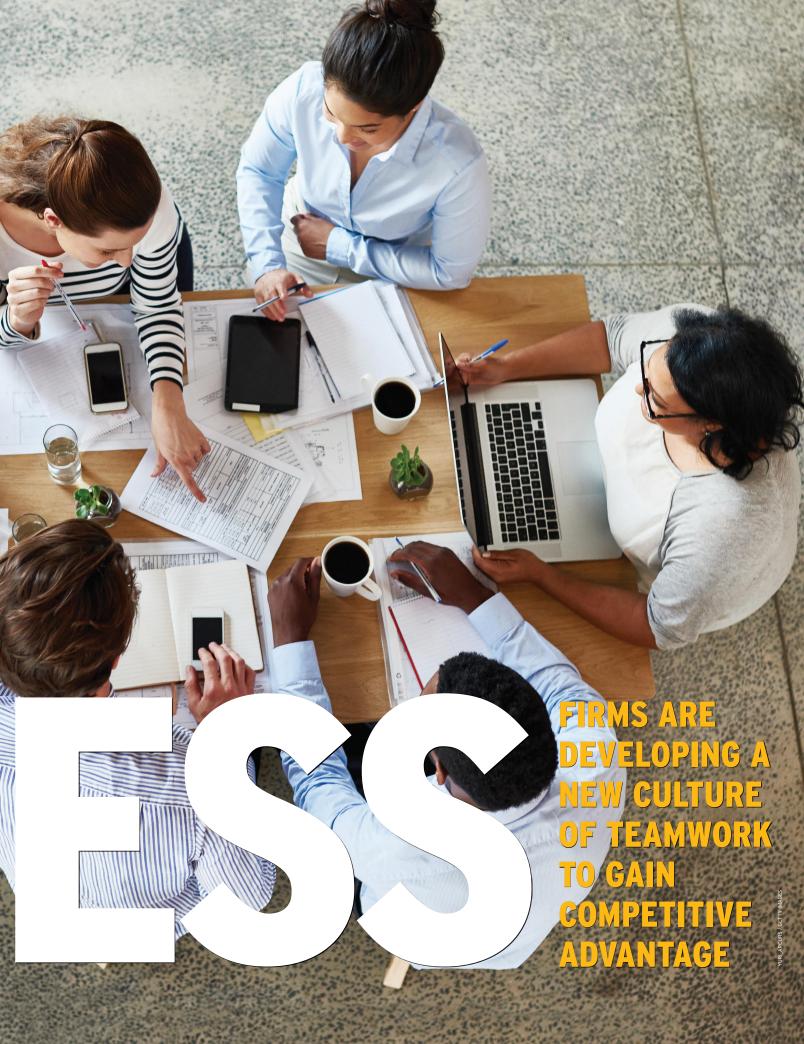


eamwork is an essential building block of society— communities, by definition, are built around people working together for the common good. Without communication, collaboration and trust that teamwork goes nowhere.

This certainly applies to engineering firms where long-term success depends on how well its employees work together—whether it is building a bridge or creating a marketing campaign. That is why there are a plethora of companies and consultants that offer team building events, workshops and tools. It also is why team building should be a core responsibility for management.

Team
Building
BY BOB WOODS for





"Team building is more impactful when it is driven from the top down with a consistent message that we support and encourage it," says Connie Taggart, director of human resources at Wright-Pierce.

The team concept is especially relevant in the A/E industry—not only for organizational cohesion but also as the best way to unite individuals with varying skills into multidisciplinary groups to design, implement and complete projects.

"We have a model based around teamwork and collaboration, where you coordinate with other disciplines on a regular basis," says Taggart. "The knowledge and valuable experience gained from being a part of those multidisciplinary design teams truly makes you a better engineer and in turn helps produce better projects for clients."

## **GROUP DYNAMICS**

Team building requires that managers have a keen understanding of each individual's professional strengths, areas where they could use improvement and what gets them excited to work with others. They also have to recognize different types of personalities and how they impact group dynamics.

Wright-Pierce focuses on a multilevel approach for team building, according to Taggart. "First, we focus on multidiscipline teams specific to service lines and expertise in distinct practice areas. Then we train across each of our eight offices for cross-discipline, inperson team building and education."

In order to stay competitive, engineering firms need a team environment in order to develop innovative and better solutions, and that means facilitating communication, according to Paul Chinowsky, director of the Program in Environmental Design at the University of Colorado, Boulder, and a frequent ACEC seminar instructor on team building. "Firms need to build avenues for people to talk to each other, work with each other and collaborate to build trust and create a team environment," he says.

The team concept is such a priority at Wade Trim Associates, one of the overarching goals in the company's five-year strategic plan is to be the best team in the business.

"Teamwork is absolutely a key part of our culture," says Tammy Forney, people services manager for Wade Trim Associates. "It is manifested in project teams. We bring staff together from across our 20 different offices to collaborate on different projects, so working well together is integral for success."

Teamwork is vital for successful project work, but it also benefits the organization in the long run, according to Chinowsky.

"If people feel connected, then two things happen. One, employees tend to stay longer and feel more invested in the company. Two, employees feel more comfortable offering ideas on improving the company," he says.

Team building is an art and a science, and engineering firms that consistently balance the two disciplines can maximize their chances for continuous success.

## **MAINTAINING BALANCE**

But building and maintaining teams can be tough. One common problem among firms whatever their size, is siloing, according to Chinowsky. "The typical situation in the engineering industry, because it is separated into specialties, is that you often have a small group of people at the top who talk to each other, but from

Engineering firms need a team environment

in order to develop innovative and better solutions, and that means facilitating communication the mid-range down, people tend to stay in their own areas. Add in administrative and IT people, and you have even more islands."

The difficulty in having many different islands, or silos, is that people come up with ideas and solutions that are optimized only for their individual specialty. "They are not bringing together all the different perspectives," says Chinowsky.

Taggart agrees that engineers have a reputation for being task-oriented, seeing what is in front of them rather than what is around them. Having specialists spread out among Wright-Pierce's multiple offices exacerbates that tendency. "We create the best team for a given project, which can include employees from any of our offices," she explains. "They may be interacting with people they're not sitting next to, but there has to be a consistent message."

Building project teams requires people who can look at the entire supply chain and take the view of the various stakeholders, according to Angela Stopper, chief learning officer and director of learning and development at the University of California, Berkeley. "Because A/E projects require so many skill sets, that forces a diversity of thought that you try to get when putting together a good team," she says.

At the same time, Stopper adds, an engineering firm needs to have strong governance of a team, making sure roles and

"Team building is more impactful when it is driven from the top down with a consistent message that we support and encourage it."

CONNIE TAGGART
DIRECTOR OF HUMAN RESOURCES
WRIGHT-PIERCE

expertise are respected. "If the lead engineer takes the point of view as the final voice of authority, other voices can get outvoted," says Stopper. "You need a team leader, but you also need a shared leadership structure where people can raise their voices."



#### **TEAM TRUST**

To appreciate other people's opinions and ideas, team members must trust one another. Chinowsky suggests that managers can instill trust through collaboration. Engineering firms are inclined to create very surface connections and not focus enough on underlying activities that build professional trust and reasons for working together.

"It may be easier to manage a project by breaking tasks down into individual pieces and making sure someone is responsible for each one," says Chinowsky. "But that relieves people of the obligation of working together."

Instead, managers should look at what parts of a project foster more interactions versus individual actions. "If you can build trust and open communications, that builds collaboration and makes people more invested in the solutions," he says.

To help nurture collaboration, Wright-Pierce incorporated Skype for Business, enterprise software that provides real-time instant messaging, Voice over Internet Protocol, video conferencing and other shared services. "These tools have brought great value to people, so they bring team members together virtually and allowing for greater productivity," says Taggart.

Stopper, who manages a 10-person team of trainers for campus initiatives at the University of California, Berkeley, advocates Ken Blanchard's Building Trust program for managers, often referred to as the ABCD Trust Model as one of the models groups can use when thinking about trust in their organization. It comprises four elements that, Blanchard's research shows, help leaders and team members learn how to build trust in the workplace and how to repair it when it has been broken:

- 1. Able: demonstrates confidence
- 2. Believable: acts with integrity
- 3. Connected: cares about others
- 4. Dependable: honors commitments

"Own your expertise; seek out, value and respect the insight of others; say what you are going to do, and then you do it," says Stopper, summarizing the Building Trust program's essence. Employees see that others follow through, or not, on everything from hitting deadlines to arriving at a meeting prepared and on time. "Not following through can really hurt team trust and cause animosity," she says. By adhering to the ABCD Trust Model, employees are able to understand the impact of their behaviors on building or eroding trust and can identify those aspects that need attention to build and maintain trusting relationships.

Wade Trim focuses on team building through its Young Professionals Group, a networking program that offers networking and career-development opportunities.

Now in its third year, the program features monthly webinars during which employees exchange ideas and best practices, as well as off-site activities such as playing Pictionary over lunch or impromptu Skype sessions.

"These are great ways to strengthen relationships," Forney says.

## **TEAM BUILDING EVENTS**

Even in the most successful engineering firms, the team concept and its motivators—communication, collaboration, trust and respect—need to be reinforced. While that is the domain of management, often with assistance from the human resources

department, many engineering firms turn to outside providers and consultants to stage team building activities and events. Typically held outside the workplace, they can range from friendly sports outings to an organized team-building event, such as a scavenger hunt or community service activity.



The trick for managers is having a team building goal and finding the right activity to achieve that goal. "Do not just do what the boss likes," says Lisa Jennings, chief experience officer at Wildly Different, a team-building event planning company. "For example, if the boss likes to play golf, others may not. Think of your group as a whole, and make sure the event is inclusive."

Jennings favors fun, out-of-the-ordinary events that emphasize camaraderie and connecting with colleagues. "Today, when people work in cubicles or remotely from home or different offices, they do not get to connect with and know one another," she says. "Team building events help people know who they are working with and come away with a new appreciation for individuals."

Additionally, Chinowsky recommends a three-step sequence for planning team-building events:

If you have a problem, where is it within the firm?
 "Do not fix something without understanding the situation," he says.

"We bring staff together from across our 20 different offices to collaborate on different projects, so working well together is integral for success."

TAMMY FORNEY
PEOPLE SERVICES MANAGER
WADE TRIM ASSOCIATES

## 2. Why do you have a problem or issue?

"It could be people doing the wrong jobs or that you have the wrong expectations," he says. "Or, it may be that you do not have proper collaboration or communication."

## 3. Hire the right company or consultant.

"Interview five or six companies to find one that matches what you are focusing on. While I am not an advocate of needlessly spending on outside people, this is one instance where it is about the long-term health and success of your firm," says Chinowsky.

Regardless of the pathway, building and maintaining effective teams remains a critical, if elusive goal.

"There is vast wisdom in the collective," Stopper says. "If you can bring diverse people together to tackle a project or challenge, it is amazing how much more successful the outcome can be."

**Bob Woods** is a technology and business writer based in Madison, Connecticut.



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# Black & Veatch Tests BVLOS Drone Flight Limits

lack & Veatch (B&V) began examining opportunities in unmanned aerial systems (UAS) in 2015 when the firm saw its potential for infrastructure inspections.

"We wanted to determine how drones fit with current business practices and into the future," says Jamare Bates, director of B&V's UAS operations. "We looked among our clients

traditional model and recognize that drones are a safer and more effective inspection tool than manned flights and climbing the towers."

for those who were willing to move beyond the

In conjunction with the St. Louis-based utility Ameren, B&V embarked on a two-year project under multiple special permits from the Federal Aviation Administration (FAA) to conduct beyond visual line of sight (BVLOS) test flights. Over the course of the project, B&V tested BVLOS flight ranging from 10 miles in 2017 to a 60-mile proof-of-concept flight in November 2018.

For the test, B&V used a gas-powered hybrid unmanned aerial vehicle (UAV) with battery-powered rotors for vertical takeoffs and landings,

If your firm has an item to submit to *In the News*, please contact Gerry Donohue at gdonohue@acec.org.





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fixed wings and a gas-powered propeller. "It wasn't the toy you see the neighborhood kid flying," says Bates. "It's much closer to the types of drones used by the military."

B&V designed and engineered the stand-alone telecommunications network along the flight path for the tests. For safety, a chase plane followed the UAV throughout the test flight, which was conducted in rural Illinois.

The FAA has taken a go-slow approach to UAS, but Bates says this project and others, such as the FAA's own UAS Integration Pilot Program, demonstrate the agency's willingness to expand their use.

"This is how the FAA works," Bates says. "They look to the market to keep pushing the envelope in a safe and effective manner."

Bates predicts that limited, rural BVLOS flights will become routine within three to five years. "We need more flights," he says. "We're going to stay at the forefront of this market and this technology. It works well with our customer base and will help us expand to other customers."

# **Burns & McDonnell Goes All in for STEM**

hrough its foundation and numerous outreach programs, Burns & McDonnell is investing big in science, technology, engineering and math (STEM) education.

The Burns & McDonnell Foundation focuses 50 percent of its charitable giving on STEM, and over the last year, firm employees have volunteered nearly 10,000 hours to support STEM education through schools and nonprofits.

"We have so many employees who are passionate about connecting students to STEM," says Julee Koncak, foundation director. "It's just been a matter of homing in on that."

A centerpiece of the firm's efforts has been the biennial Burns & McDonnell Battle of the Brains competition.

"We developed it in conjunction with Science City in Kansas City," says Emily Rhoden, Burns & McDonnell's K-12 Outreach specialist. "We send out an RFP to students throughout the region to come up with the next idea for a permanent, \$1 million exhibit that we build at Science City."

The firm and Science City, which is an interactive science center inside Kansas City, Missouri's, Union Station, completed the fifth Battle of the Brains competition in 2017.

"We had more than 800 proposals," says Koncak. "Four hundred of our employees read through the proposals and conducted several rounds of judging." Entrants were divided into two groups—grades K-6

and 7-12—and the judges worked their way down to the 20 best entries, from which the winning proposal was selected.

"The top 20 entrants received grants of between \$2,500 and \$50,000," says Koncak.

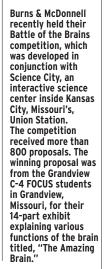
The winning proposal was from the Grandview C-4 FOCUS students in Grandview, Missouri. Their proposal, "The Amazing Brain," was a 14-part exhibit explaining various functions of the brain.

"Since the first Battle of the Brains in 2011, more than 18,000 students have participated in the program, and Burns & McDonnell has given more than \$500,000 in grants for STEM education," says Koncak.

Rhoden has initiated several other outreach programs at the firm. "Thousands of students have participated in our job shadowing," she says. "We also have Career Jumping, which is like speed dating for careers. It's awesome for younger kids because they can see all of the different career paths that we have here."

Five years ago, Burns & McDonnell started a summer camp. "Now we have three camps each summer, and one is just for girls," says Rhoden. "It's a three-day event that delves into what it's like to be an engineer."

The firm also works with educators. "One teacher influences hundreds of kids, so we started an educators summit," says Koncak. "In each session, we work with nearly 300 educators for a half-day, breaking down the stereotypes about engineering and giving them a realistic approach to getting students excited about STEM."







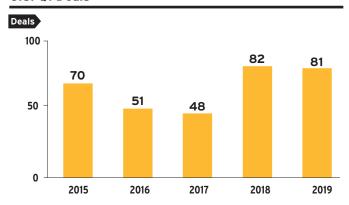
## **Torrid Pace of Deal Activity Continues in 2019**

## BY NICK BELITZ

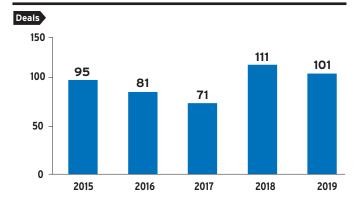
oming off a record year of industry deal-making in 2018, the first quarter of 2019 saw a continuation of the torrid pace of merger and acquisition (M&A) activity. Overall, buyers struck 81 deals involving a U.S.-based seller in the first quarter of 2019. That level of activity almost matches deal-making in the first quarter of 2018 when buyers announced 82 deals. While the number of global deals made during the first three months of 2019 declined slightly from the previous year, both global and domestic industry transactions in the first quarter of 2019 represent notable increases in the number of deals announced over the same time periods in 2015, 2016 and 2017. This would indicate we have another year of robust—possibly record-setting—deal-making ahead.

Looking back to transaction volume over the last 12 months, the industry tallied 382 deals globally, up 7.3 percent from the 12-month period ending Q1 2018. Deal-making has been particularly strong in the U.S., with the 289 deals consummated over the last four quarters, representing a 15.1 percent increase

### U.S. Q1 Deals



### Global Q1 Deals



over the preceding 12-month period. Truly, the appetite for M&A for firms in this industry has never been stronger. Below are additional takeaways from the latest data:

- 1. We have robust M&A across a variety of industry sectors. ACEC members have made acquisitions across a range of markets and corresponding services. Multiple deals targeting geotechnical services took place during the quarter, including Gannett Fleming's (Camp Hill, Pa.) acquisition of geotechnical firm SAGE Engineers (Roseville, Calif.) and **RESPEC's** (Rapid City, S.D.) purchase of **Mine** Development Associates (Reno, Nev.). In addition, both vertical engineering and horizontal infrastructure have continued to be of high interest to buyers, with notable deals including Thornton Tomasetti's (New York) acquisition of Becker Structural Engineers (Portland, Maine) and DLZ's (Columbus, Ohio) purchase of Johnson & Anderson (Waterford Township, Mich.). Continuing a theme from 2018, demand for nontraditional services remains elevated. Notably, in March, NV5 (Hollywood, Fla.) announced the acquisition of **The Sextant Group** (Pittsburgh), a provider of audiovisual, information and communications technology, acoustics consulting and related design services.
- 2.Private equity buyers continue to outpace public buyers. Private equity firms continued their aggressive push into the industry in Q1 2019, further widening their lead over publicly traded industry firms in terms of the number of deals. Nearly one-fifth, or 19 percent, of deals struck during the quarter were PE-backed while just 9 percent of deals were made by publicly traded buyers. Of interest is the fact that this gap has widened substantially over the last year—in the first quarter of 2018, private equity buyers notched 23 percent of deals compared with 19 percent for publicly traded buyers.
- 3. Recent PE activity presents a case study of buy-and-build in the Southeast and Southern U.S.  $\operatorname{Two}$ examples of acquirers using the "buy-and-build" strategy employed by many private equity firms are CONSOR Engineers and Ardurra-King. Earlier this year, CONSOR Engineers announced the creation of a national transportation and infrastructure engineering brand via the consolidation of four regional leaders: Target Engineering Group (Coral Gables, Fla.), Infrastructure Engineers (St. Cloud, Fla.), Johnson-Adams & Associates (Plant City, Fla.) and AIA Engineers (Houston). The move echoed that of Ardurra-King, which formed in 2017 when King Engineering (Tampa, Fla.) merged with Ardurra Group (Metairie, La.). In November of last year, the engineering company, which by then included eight firms, rebranded as Ardurra Group and has since acquired another firm. Critically, we note that both CONSOR and Ardurra are backed by private equity firms. With so many types of buyers—private equity, publicly traded and strategic—active in the marketplace in 2019 and

acquiring so many different types of firms, the stage is set for another strong and exciting year of deal-making for ACEC firms.

#### **ACEC DEAL-MAKERS**

#### **APRIL 2019**

**Thornton Tomasetti** (New York) acquired **Becker Structural Engineers, Inc.** (Portland, Maine), a structural engineering firm with specializations in mass timber, parking structures and highway bridge projects. Both firms are ACEC members.

Engineering and architecture firm **Gannett Fleming** (Camp Hill, Pa.) expanded its presence in the West with the acquisition of **SAGE Engineers** (Roseville, Calif.), a geotechnical firm. Both firms are ACEC members.

#### **MARCH 2019**

ACEC member **SmithGroup** (Detroit) merged with **Paulien & Associates** (Denver), a higher education planning firm.

ACEC member **WSP** (Montreal) announced its intent to acquire **Indigo Planning Ltd.** (London), an independent town planning consultancy that provides specialist planning advice to the residential, retail, commercial, industrial, leisure, tourism, infrastructure and energy markets.

ACEC member **NV5** (Hollywood, Fla.) announced the acquisition of **The Sextant Group** (Pittsburgh), a provider of audiovisual, information and communications technology, acoustics consulting and design services. The Sextant Group is known for creating integrated technology solutions for a wide range of public and private sector clients.

Consulting and engineering firm **Ardurra Group** (Tampa, Fla.) acquired **Design South Professionals, Inc.** (Anderson, S.C.), an ACEC member. Design South is an engineering consulting firm serving the water and wastewater market.

ACEC member **Crawford**, **Murphy & Tilly**, **Inc.** (Springfield, Ill.) acquired **Stone Engineering Group** (**SEG**) (Jacksonville, Fla.). SEG provides transportation, water, stormwater, site design and construction inspection services to state, municipal and private clients.

ACEC member **Hardesty & Hanover** (New York) acquired **Frederick P. Clark Associates, Inc.** (Rye, N.Y.), a community planning, development, environmental and transportation consulting firm. Hardesty & Hanover is a bridge engineering services firm.

**VHB** (Watertown, Mass.) acquired **The Johnson Co.** (Montpelier, Vt.), a 30-person environmental science and engineering firm. VHB provides transportation planning and design, land development and environmental services. Both firms are ACEC members.

ACEC member **CBS Squared**, **Inc.** (Chippewa Falls, Wis.) acquired **Fleming**, **Andre and Associates**, **Inc.** (Eau Claire, Wis.), a design and construction engineering firm. CBS Squared is a multidiscipline engineering, architecture and surveying firm.

ACEC member **CHA Consulting, Inc.** (Albany, N.Y.) acquired **Daedalus Projects, Inc.** (Boston), a project and construction management firm. CHA is a full-service engineering consulting firm that provides a wide range of technology-enhanced planning and design services to public, private and institutional clients.

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 industry and provides strategic business planning, merger and acquisition, valuation, executive coaching, leadership development and executive search services. He can be reached at nbelitz@morrisseygoodale.com.

ACEC member **DLZ** (Columbus, Ohio) acquired **Johnson** & **Anderson** (Waterford Township, Mich.), a municipal, water and wastewater engineering firm. DLZ provides architectural, engineering and surveying services.

**Harley Ellis Devereaux (HED)** (Southfield, Mich.), an ACEC member, merged with **Integrated Design Group, Inc.** (Boston), a data center designer. The merger allows HED to reach new audiences in the data center market sector.

Full-service engineering and architecture firm, **Thompson & Litton** (Wise, Va.), announced the acquisition of two engineering firms, **Stafford Consultants, Inc.** (Princeton, W. Va.), and **Beeson Lusk & Street** (Johnson City, Tenn.). Thompson & Litton and Stafford Consultants are ACEC members.

### **FEBRUARY 2019**

**Nishkian** (San Francisco), a structural engineering firm, joined **IMEG Corp.** (Rock Island, Ill.), a design and consulting firm. Both firms are ACEC members.

ACEC member **H2M architects + engineers** (Melville, N.Y.) acquired **Wiedersum Associates Architects** (Hauppauge, N.Y.), an architecture firm that focuses on the education market. H2M is a multidiscipline professional consulting and design firm.

**GSE Systems** (Sykesville, Md.), a provider of engineering, expert staffing and simulation software to clients in the power and process industries, acquired **DP Engineering** (Fort Worth, Texas), an ACEC member. DP Engineering is a provider of engineering services and solutions to the nuclear power industry.

ACEC member **RESPEC** (Rapid City, S.D.) acquired **Mine Development Associates** (Reno, Nev.), a firm that serves the mining industry with geologic expertise and engineering services. RESPEC is a pioneering geoscience, engineering and technology firm.

ACEC member **James W. Sewall Co.** (Old Town, Maine) acquired **Maine Traffic Resources** (Gardiner, Maine), a transportation engineering firm. James W. Sewall provides services in aerial photography, surveying and GPS, photogrammetry, cadastral mapping, GIS, forestry consulting and engineering.

Halff Associates, Inc. (Richardson, Texas), acquired Genesis (Tampa, Fla.) and its construction engineering and inspection company, Genesis CE&I Services. Genesis will do business as Genesis Halff and Genesis CEI will do business as Genesis Halff CEI. Both Halff and Genesis are ACEC members. ■



# On the Move

Matthew G. Cummings was named president and CEO of San Franciscobased T.Y. Lin International, succeeding former president and CEO Alvaro J. Piedrahita, who transitions to a new role as chairman of TYLI Group. Cummings, who formerly held senior executive positions at AECOM, is the past president of ACEC/PA.

Christopher C. Sherry was named CEO of Greenwood Village, Coloradobased Merrick & Co., succeeding David **G. Huelskamp**. Huelskamp has served as CEO or chairman for the past six years and will continue as chairman. Sherry has served as the firm's president and will continue those responsibilities as he assumes the CEO role.

Matthew S. Richards has been promoted to president and CEO of Madison, Wisconsin-based Strand Associates, Inc., succeeding the retiring Philip **E. Budde**, who started with company in 1976 and became president in 2005 and CEO in 2017. Richards joined the firm in 1998 and most recently served as executive vice president.

Following a corporate restructuring and rebranding, Darren L. James was appointed president of KAI **Enterprises**, overseeing the holding company. Previously, he served as president and COO of KAI Texas. Matt Westphal has been named president of KAI Design and KAI Engineering, traveling between the company's Atlanta, Dallas and St. Louis offices.

Charlotte, North Carolina-based WK Dickson & Co., Inc., announced several key leadership changes following a restructuring. David Peeler, previously the president/CEO, has transitioned out of the president role and will continue serving as CEO and chairman. David **Pond** assumed the role of president, he previously served as COO. Scott Whalen was promoted to COO, he previously served as vice president and Raleigh regional manager. Scott **Sigmon** has been promoted to vice president and Raleigh regional manager. He formerly served as the program manager for the watershed services group in the Raleigh, North Carolina, office.

Joe Champion was promoted to subsidiary president of ECS Florida, LLC, an operating entity of the ECS Group of Companies, where he will oversee leadership, financial management, business development and training. Champion, who formerly served as branch manager of the Jacksonville, Florida, and Brunswick, Georgia, offices, will remain based in the Jacksonville, office.

Camp Hill, Pennsylvania-based Gannett Fleming announced the following appointments: Audrey Daly was promoted to general counsel, succeeding Barbara McLemore, who joined Gannett Fleming in 1980 as the firm's first in-house attorney. Daly formerly served as corporate counsel for the firm and will continue in her role as corporate ethics officer. Terry Snow was promoted to senior vice president and Southeast region director. He recently served as the company's North Carolina area transportation manager and Raleigh, North Carolina, office principal.

New York-based STV announced the following appointments: John Ponzio



Matthew G. Cummings



Christopher C. Sherry



Matthew S. Richards



Darren L. James



**Matt Westphal** 



**David Peeler** 



**David Pond** 



Scott Whalen



Scott Sigmon



Joe Champion



**Audrey Daly** 



## **MEMBERSINTHENEWS**

has been promoted to senior vice president of STV's national systems practice. He formerly served as vice president and director of systems, safety and security. He is based in the Philadelphia office. **John Brestin** joined the company as vice president and national bridge practice leader. He formerly served as vice president, bridge practice lead – North America at COWI. He is based in the Seattle office. **Tertulien** "Tony" Augustin was promoted to vice president. He joined STV in 2017 as the firm's civil/highway engineering director.

Mike Farrell was appointed senior vice president of civil and field services at Fargo, North Dakota-based Ulteig. Farrell has a distinguished 30-year career in the U.S. Army Corps of Engineers, most recently with the rank of Colonel. Previously, he served as commander of the Mosul Dam Task Force and as commander of both the Sacramento and Walla Walla districts and deputy commander of the Europe District. He is based in the Denver office.

San Diego-based **Kleinfelder** announced the following appointments: **Lisa Millet** joined the company as executive vice president and central division director.

Millet is based in the company's Denver office and will oversee operations throughout the Central United States and Canada. She previously served as managing partner of the Global Key Client Program. **Glen Christensen** joined the firm as vice president and area manager for the company's Alberta, Canada, operations, which include offices in Edmonton and Calgary.

Blair Hanuschak was promoted to executive director of structures at Houston-based Walter P Moore, succeeding Lee Slade, who has led the Structures Group since 2001. Slade continues to serve as chairman and will transition to a new role leveraging his 42 years of experience. Hanuschak, a 27-year veteran at Walter P Moore, has served as a regional and managing director for structures and as global aviation practice leader. He is based in the Washington, D.C., office.

Krista Raines joined Thornton Tomasetti's San Francisco office as vice president, providing senior-level support to the firm's Sustainability practice. She will also lead the San Francisco Building Analytics team. Raines formerly served as sustainable design leader at stok in San Francisco where she started the building enclosure commissioning and daylight analysis service lines.

**Lisa Nisenson** joined West Palm Beach, Florida-based **WGI** as vice president of new mobility and connected communities. Nisenson is a national leader in emerging planning technologies and innovations and is the co-founder of GreaterPlaces.com. She is based in the headquarters office.

**Dan Thoma** has been promoted to vice president of San Antonio-based **Pape-Dawson Engineers.** Thoma, who relocated from San Antonio to Austin, will lead the office's transportation team, including project strategy and delivery for the Austin area and the I-35 corridor.

**Ed Shackelford** joined Houston-based **AEI Engineering** as associate vice president and director of water resources. He formerly served as senior vice president, business development at Jones & Carter.

Alexander Stone joined Kansas City, Missouri-based TranSystems Corp., as assistant vice president and director of the Atlanta office. Stone also serves as co-chair of the Roadway Design Policy Subcommittee with ACEC/Georgia.







John Brestin



Tertulien "Tony" Augustin



Mike Farrell



Lisa Millet



Glen Christensen



Blair Hanuschak



Krista Raines



Lisa Nisenson



**Dan Thoma** 



**Ed Shackelford** 



Alexander Stone

## **Welcome New Member Firms**

ACEC/Arizona

ARQ Engineering, LLC

Fort Mohave

Atwell

Mesa **CONSOR Engineers, LLC** 

Chandler

Landcor Consulting, PC

Mesa

Point North Advisors, LLC

Scottsdale

Sustainability Engineering

Group, LLC

Scottsdale

ACEC/Arkansas

Ally Energy Solutions, LLC

Conway

ACEC/California

AYCE Consulting Engineers. Inc.

Orange

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Brooklyn Park

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20 Knowledge is Revenue: How to Conduct Killer Competitor Research (online class)

22 RFP-Request for Personality, Win People, Win Projects (online class)

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# Leadership Skills Program Class 4; New Publications Address Economics and Engineering

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the economic impact and weight of the engineering and construction industry on each state and on the nation.

"ACEC Quarterly Economic Reports" feature information on five economic trends, construction spending by market sector, and quarterly revenues for A/E firms.

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of each state and include information related to gross domestic product, engineering employment and construction spending per state. The data provided offers insight for engineering firm managers, as well as a sound starting point for discussions with policymakers on the importance of the engineering industry and infrastructure to a robust U.S. economy.

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Cambridge





18x30x9



20

20

25



20

	Dimensions		Capacity				
Meeting Room	W×L×H	Sq. Ft.	Theater	Schoolroom	Conference	U-Shape	Banquet
Washingtonian	80x95x16	7,615	800	550	=		490
Salon A	80x48x16	3,783	220	200	===	-	160
Salon B	40x48x16	1,886	120	80	28	38	80
Salon C	39x48x16	1,904	120	80	28	38	80
Franklin	17x34x12	577	40	30	20	20	30
Madison	22x32x12	691	60	32	24	25	40
Monroe	22x32x12	691	60	32	24	25	40
Lincoln Forum (auditorium)	( <del>=</del>	=	178	=:		195	-
Grand Dominion	80x114x16	9,107	1100	560	27	75	550
Salon I	40x37x16	1,505	96	80	30	36	80
Salon II	40x37x16	1,504	96	80	30	36	80
Salon III	37x40x16	1,504	96	80	30	36	80
Salon IV	37x40x16	1,505	96	80	30	36	80
Salon V	40x39x16	1,530	96	80	30	36	80
Salon VI	40x39x16	1,531	96	80	30	36	80
Jeffersonian	62x82x16	5,035	450	360	2		300
Salon 1	27x31x16	824	60	46	189	30	40
Salon 2	27x31x16	827	60	46	18	30	40
Salon 3	27x31x16	828	60	46	18	30	40
Salon 4	27x31x16	827	60	46	18	30	40
Salon 5	27x31x16	829	60	46	18	30	40
Salon 6	31x27x16	829	60	46	18	30	40
Adams	21x32x12	708	60	32	24	25	40
Hamilton	22x32x12	701	60	32	24	25	40
Treaty	19x38x11	757	·=	-	<u>.</u>	<b>E</b>	=
Westcott	34x19x11	629	36	30	24	7 <b>4</b>	40
Sargent	16x27x9	465	25	20	20	20	20
Marlborough	18x25x9	533	25	20	20	20	20
Cumberland	18x25x9	523	25	20	20	20	20
Wellesley	18x25x9	528	25	20	20	20	20

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