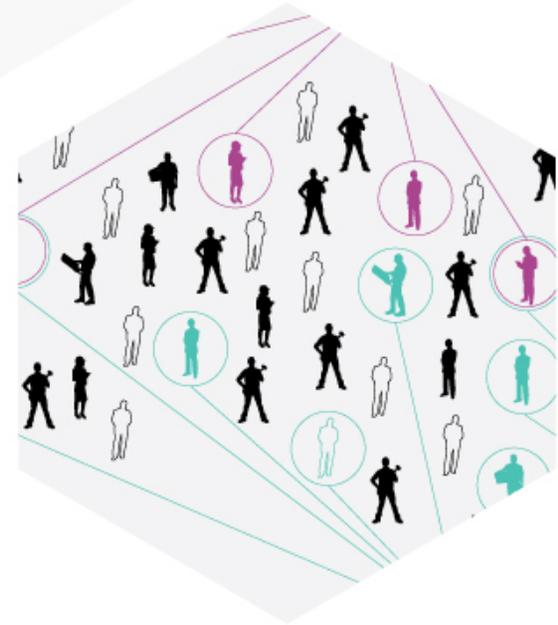
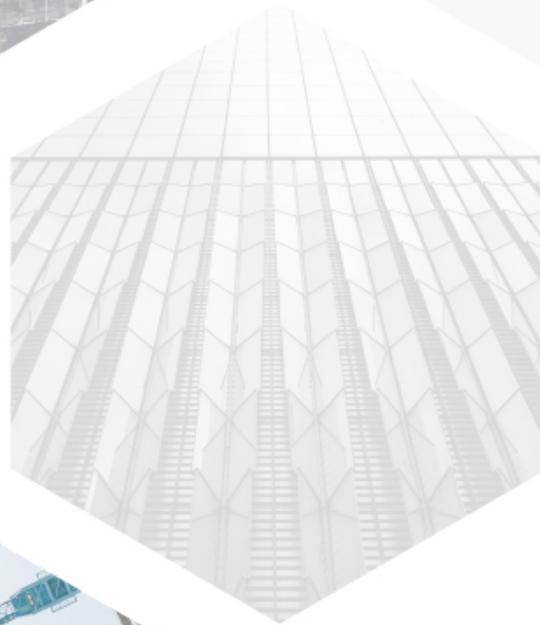


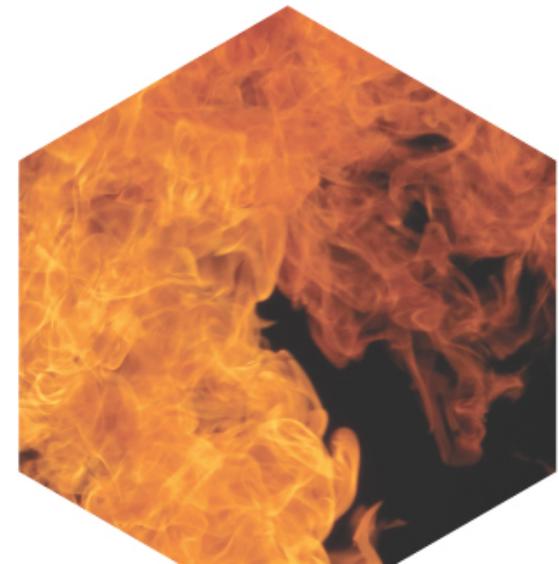
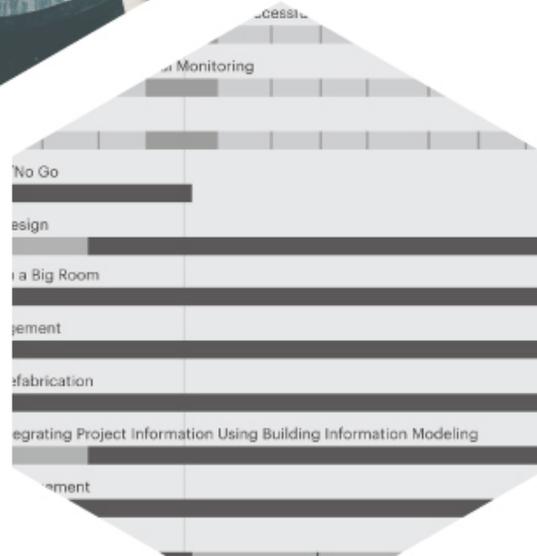
2018  
ANNUAL REPORT



# CHANGE AND CHANGEMAKERS



CHARLES PANKOW  
FOUNDATION



# President's Message



In any organization, it only takes one inspired person to make an outsized impact. This is especially true at the Charles Pankow Foundation, where the executive director is solely responsible for executing the Foundation's mission and directives of the Board.

The Foundation has been very fortunate, indeed, for **Mark Perniconi's** tireless efforts to implement positive changes to the way the Pankow Foundation does its work. In October 2018, Mark stepped down, yet over his six years as executive director, Mark's contributions were enormous:

- **TRIPLE** the number of organizations that have partnered and co-funded our research projects. Annual co-funding is now approaching \$1 million per year.
- A significant **INCREASE** in the number of universities receiving Pankow Foundation grants.
- **COMMITMENTS** by key professional associations to make research funding a part of their ongoing operations, whether as partners with the Foundation or on their own.
- **EXPANSION** of research initiatives into a broader range of architecture, engineering, and construction (AEC) topics to including water resources, carbon accounting, and evolving project delivery concepts.

Mark did all this with his characteristic wit, common sense, and unwavering commitment to Charlie Pankow's legacy.

The stressors and challenges to our AEC industry are ever-changing. While the Pankow Foundation's vision – to provide the AEC industry with better ways to design and build – has not wavered, we, by definition, drive change. Mark has been our catalyst, our advocate, and our friend.

As Mark moves to the next phase of his life and career, we wish him the very best. We're truly grateful for his passionate advancement of our industry through research, collaboration, and innovation.

**Richard M. Kunnath, PE**  
*Board President, Charles Pankow Foundation*



Ron Klemencic, PE, SE, Hon. AIA

## CHANGEMAKER Challenges the Industry

Our most sincere congratulations to Charles Pankow Foundation Board member Ron Klemencic, PE, SE, Hon. AIA, for winning the Engineering News-Record 2018 Award of Excellence. Throughout his career, Ron has been a tireless advocate for the Foundation's mission of fostering better ways to design and build.

The Foundation encourages businesses, institutions, and individuals to join its mission in advancing innovation, creativity, and collaboration in the AEC industry. According to the McKinsey Global Institute, construction-related spending accounts for 13 percent of the world's GDP, yet the sector's annual productivity growth has only increased 1 percent over the past 20 years.

"The amount of money AEC companies currently invest in research is essentially zero," said Ron in his [acceptance speech](#). "I challenge my colleagues to join with the Pankow Foundation to increase our industry's productivity. Articulate innovative ideas. Contribute funding toward research projects. Strengthen the Foundation's endowment. Donate in-kind services. Make a difference in the way buildings are designed and constructed!"



## CPF2.0: Vision, Progress, and CHANGE

In late 2017, we held a facilitated strategic planning session, which we called “CPF 2.0,” to ensure that the Charles Pankow Foundation will continue in a manner consistent with Charlie Pankow’s vision. We developed a **FIVE-YEAR PLAN** to expand deeper into the AEC industry, build capacity, and grow the Foundation’s impact. Executive director succession planning and Board of Directors expansion is an important part of the strategy.

In October 2018, the Board of Directors announced the appointment of Anne M. Ellis, PE, FACI, F.ASCE, as the Foundation’s new executive director. Anne’s career has focused on infusing innovation into projects, programs, and business strategies.

In addition to her technical and design expertise, which focused on structural engineering and reinforced concrete, Anne has served in many prestigious roles in the industry: president of the American Concrete Institute, a Board member of the National Institute of Building Sciences and Structural Engineering Institute Futures Fund, and an executive committee chair of the Structural Engineering Institute Global Activities Division.



## Wind and Fire: New Initiatives Tackle the Elements

Performance-based design enables the development of structures that will have predictable performance when subjected to defined loading. The required performance and defined acceptable damage levels is the starting point for the design. The design performance is then demonstrated through analysis, simulation, prototype testing, or a combination of these techniques.

The Foundation is offering its support to the American Society of Civil Engineers' Structural Engineering Institute for development of a Performance-Based Wind Design Pre-Standard that will allow design engineers more flexibility and creativity building frame design and will advance the requirements for component and cladding systems design to protect the building interior.

The Foundation is also supporting the Structural Engineering Institute to advance performance-based structural fire engineering design. Our goal is to support the industry in developing, writing, and publishing the state-of-the-art exemplar procedural guidance to properly execute a performance-based structural fire engineering design. The work resulting from this initiative will be a game-changer.



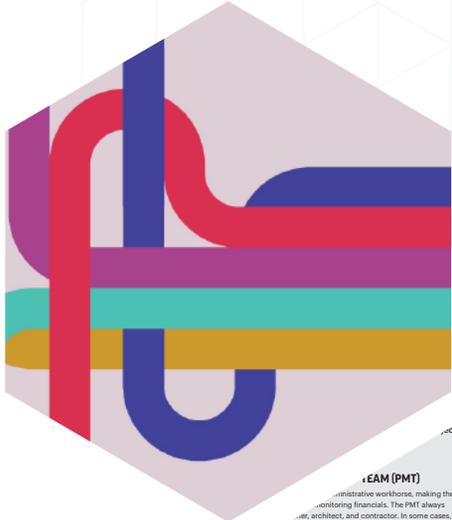
## Collaboration for Positive CHANGE

One of the Charles Pankow Foundation's most powerful tools for affecting positive change is our collaborations with like-minded organizations and individuals. We bring teams together for practical, mutually-beneficial initiatives.

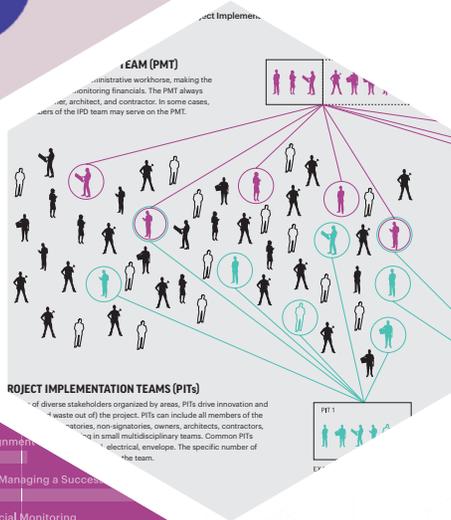
The Foundation is especially honored to have several key partners donate valuable advertising space in their publications to carry our message, which is simple: join in to help the Foundation grow its reach and impact – and transform the way we design and build.

Many thanks to the publishers of [Engineering News-Record](#) (BNP Media), [Modern Steel Construction](#) (American Institute of Steel Construction), [Civil Engineering](#) (American Society of Civil Engineers), [Concrete International](#) (American Concrete Institute), and [Civil + Structural Engineering](#) (Zweig Group) for hosting, pro-bono, the Pankow Foundation's ads.





# CHANGE the Project Delivery, Improve the Outcomes



Over the past decade, Integrated Project Delivery (IPD) has emerged as an important alternative to traditional forms of project delivery. Its adherents have reported improvements in cost, schedule, and quality, achieved in an atmosphere that is less adversarial and more collaborative.

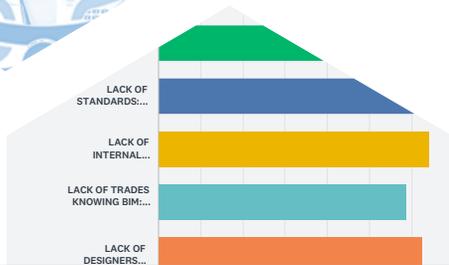
Much has been written about IPD, most of a theoretical or research nature. The Charles Pankow Foundation sponsored a grant to develop a practical guide to IPD, which was completed in 2018.

***Integrated Project Delivery: An Action Guide for Leaders*** is a free, [downloadable resource](#) for owners, architects, engineers, and contractors to understand basic principles and select optional features that best address project needs.

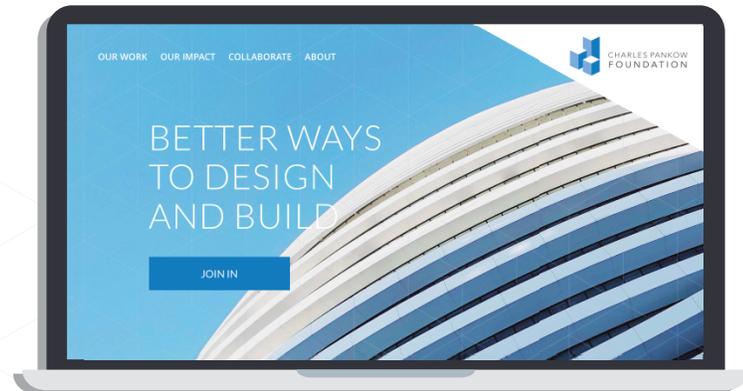


# BIM Now More Accessible

New to BIM? Think your project's too small to implement BIM? That's about to change. The Charles Pankow Foundation sponsored **BIM Project Execution Plan Guide: An Introduction for Those New to BIM** to introduce BIM Project Execution Plan concepts to teams on small projects that may have some team members who have never previously used BIM. The **BxP Guide**, for short, was substantively completed in 2018; the final guide is now available for download and use.



Please visit and explore our new website at [pankowfoundation.org](http://pankowfoundation.org)



2018

## Research Grants Awarded

\$300k

ASCE/SEI

*Pre-Standard for Performance-based Wind Design*

\$69k

University of Colorado

*Revisiting Project Delivery Performance*

\$160k

Purdue University

*CF-CPSW Fire Engineering*

\$230k

ASCE/SEI

*Advancing Performance-Based Structural Fire Engineering Design in the U.S. through Exemplar Procedural Guidance*

\$380k

University of Kansas

*Development of Large High-Strength Headed Reinforcing Bars*

\$178k

University of Washington

*Embodied Carbon Construction Calculator (EC3)*

\$250K

University of California, Davis

*Comprehensive Revision of Design Considerations for Column Base Connections in Steel Moment Frames*



## Research Grants Completed

### UNIVERSITY OF WASHINGTON

Kathrina Simonen, AIA, SE, LEED-AP

*Practice Guide: Life Cycle Assessment (LCA) for Low Carbon Construction*

### BIMFORUM (AGC)

Will Ikerd, PE, CWI, LEED AP

*BIM Execution Planning Guide (BxP Guide)*

### UNIVERSITY OF WASHINGTON

Laura Osburn, PhD

*Integrated Project Delivery (IPD) Practitioners Guide*

### UNIVERSITY OF FLORIDA

Bryan Franz, PhD

*Evaluating the Impact of BIM on Project Performance*

### THE PENNSYLVANIA STATE UNIVERSITY

John Messner, PhD

*Evaluating the Impact of BIM on Project Performance*



Category	Percentage
Successful	100%
Monitoring	100%
No Go	100%
Design	100%
in a Big Room	100%
Management	100%
Refabrication	100%
Integrating Project Information Using Building Information Modeling	100%
Management	100%

Phase	Key Activities
PATH TO CONTRACT	Owner Alignment Team Selection
ORIGINS CONSIDERATIONS	The Contract Workshop/Team Alignment Team Management Building and Managing a Successful IPD Team Financial Organization and Financial Monitoring Lean Thinking
EARLY WORK	Validation: Go/No Go Target Value Design Collaboration in a Big Room Design Management Prefabrication Integrating Project Information Using Building Information Modeling Risk Management
LATER WORK	Project Dashboards Team Maintenance
WHAT DOES IT MEAN	

## Better Ways to Design and Build