



CONSTRUCTION INDUSTRY INSTITUTE®

CII's member roster comprises over 150 of the world's most successful organizations. Together, we conduct revolutionary R&D in the capital projects industry, fueled by: *Technology-Enabled Innovation, Disruptive Collaboration*, and a keen *Focus on the Future*.



# ABOUT CII

Your industry peers are collaborating with academics from top Engineering and Business schools to generate game-changing, industry sector-focused research. The Construction Industry Institute (CII), based at the University of Texas at Austin, is the research and development center for the capital projects industry. CII exists to leverage capital projects to produce distinctive business results for its members.

Our industry is at the heart of improving people's lives through the projects that we plan, design, build, and operate. As the primary research and development center in the capital projects industry, CII shoulders a responsibility to transform the industry and make it better.



## The world is looking to CII for thought leadership and “what’s next.”

In the last few years, CII has made several substantial moves to elevate its ability to positively impact your projects and the business value you receive from participating and investing in the Institute. These moves, primarily the formation of CII’s Industry Sector Committees (see opposite page), have generated a renewed energy and enthusiasm throughout the membership and across the industry.

### TECHNOLOGY-ENABLED INNOVATION

We seek to understand technology for what is possible and to be open to those opportunities. That’s an important distinction, because the alternative is to use technology to automate existing (and possibly ineffective) methods for getting work done. Think about it: innovation only happens when we are unafraid to explore without already knowing the solution.

In this vein, CII has launched a portfolio of research and development into the Next Generation of Advanced Work Packaging. The creation of Next Generation Advanced

Work Packaging will simultaneously address the industry’s challenges surrounding productivity, workforce, and deploying AWP. By building a state-of-the-art production system, capital projects will be able to leverage the industry workforce and supply chain to drastically reduce or eliminate non-value added time in planning, engineering, procurement, construction, and maintenance activities, thereby maximizing project ROCE and ROI. **Find more info about this research program in CII’s blog: [www.construction-institute.org/blog](http://www.construction-institute.org/blog)**

### DISRUPTIVE COLLABORATION

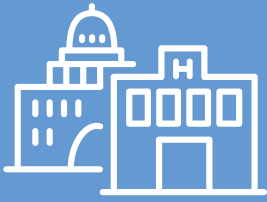
We cannot achieve our mission without positive and disruptive collaboration. CII continues to expand our membership through the efforts of our Industry Sector Committees. New owners, contractors and service providers continue to join every month. CII is increasing its involvement and footprint around the world through our existing and emerging affiliates since our membership operates and sources globally. Likewise, we moved to expand our programs and member benefits by collaborating with industry groups such as the Construction Owners Association of Alberta (COAA) and the Construction Users Roundtable (CURT). Together with these two associations, CII launched the world’s first high-level productivity calculator in 2017. Having a single number (like safety) to measure productivity will have a profound impact.

### BUSINESS MODEL TRANSFORMATION

CII made amazing progress in the last three decades to make the business of our business healthier and more sustainable. Recently, we launched a series of workshops around the U.S. with the brightest minds in a variety of disciplines to envision how the industry should transform. What emerged was prescient: a new business model to improve companies’ returns on the projects they undertake. CII’s vision for this new business model builds on the Institute’s research and practices while leveraging the latest technology platforms, financial structures and legal practices (amongst others). CII is collaborating with 15 industry groups and working with its member organizations to conduct this new breed of research.

### A FOCUS ON THE FUTURE

“What’s next” must be the focus for CII. Although understanding and documenting current practice is important, the Institute views this information as a point of departure toward a brighter future for our members and the wider industry. CII will continue to create the knowledge necessary to position the industry for success going forward.



## FACILITIES AND HEALTHCARE

Government buildings, healthcare facilities, higher education institutions, hospitality and commercial buildings

### CURRENT R&D ACTIVITY

**Beyond the capital cost, how does the built environment impact the business case for a project?**

The purpose of this project is to find further ways to achieve optimal business results, specifically by providing a life-cycle cost estimating tool to capital project teams to justify how and why features of the built environment support and/or enhance the business case of an organization.

### BUSINESS IMPERATIVES

Renovation/Revamp of Existing Facilities
Portfolio Management
Technology Impacts to Construction Management (e.g. BIM)
Life Cycle Costs



## POWER, UTILITIES AND INFRASTRUCTURE

Includes power (generation and transmission), utilities (electric, gas, water, wastewater, steam, recycling, waste processing and telecommunications) and infrastructure (rail and subway, ports and terminals, airports, roads, bridges and tunnels)

### CURRENT R&D ACTIVITY

**Identifying and Evaluating the Impact of Regulations throughout the Project Life Cycle**

Regulatory impacts are readily changing. During these times of disruption, before the dynamic conditions become the new norm, is when the organization and project changes can be best captured to evaluate how companies are responding to unanticipated and imposed requirements. Research would be conducted to take full advantage of not only preexisting incorporation of regulations, but, also, what can be learned when on-going projects are disrupted by new or changing regulatory requirements.

### BUSINESS IMPERATIVES

System Reliability
Capital Efficiency
Customer Affordability
Government Regulations
Siting and Location of Projects Driven by Environmental Considerations
Cannot Set Own Prices



## MANUFACTURING AND LIFE SCIENCES

Industrial facilities related to pharmaceuticals, automobile and high-tech manufacturing, food/beverage, agriculture, pulp/paper, and consumer products and companies whose primary purpose is to engineer, design and build or revamp facilities that include a manufacturing process to produce for the market

### CURRENT R&D ACTIVITY

**Flexible Facility Development for Manufacturing & Life Sciences**

The expectation for this research team is to build upon the other work CII has performed (i.e. Fast Track, FEP, modularization etc.) and generate deliverables that would provide a methodology or tool for evaluating which specific parts of a project can be generalized to aid in the development of a flexible facility.

### BUSINESS IMPERATIVES

Improve Speed to Market
Labor Availability
Reduce Costs
Improve Capital Efficiency



## DOWNSTREAM AND CHEMICALS

Industrial facilities related to refining, petrochemical, specialty chemical and industrial chemicals production

### CURRENT R&D ACTIVITY

#### How to Double Productivity

The goal of this study is to establish a roadmap for research of ground breaking, bold game-changing ideas, technologies, and practices that lead to double or greater productivity. The roadmap should be specific to DCC members and drive for “wins” for all parties – owners, contractors, subcontractors, suppliers, consultants.

#### Construction Readiness Assessment for Productivity Improvement

This research should first identify the steps for proper planning and implementation of construction driven productivity practices. Then, the study should develop a methodology and a fully formed tool to assess construction readiness at different points of the project life cycle.

### BUSINESS IMPERATIVES

Competitiveness

Transparency

Predictability

Health, Safety and Environment

Improved Delivery Process Flexibility



## UPSTREAM, MIDSTREAM AND MINING

Includes onshore and offshore facilities and terminals, mining, pipelines and oil and gas production

### CURRENT R&D ACTIVITY

#### Achieving Higher Levels of Standardized Facility Design in the Upstream, Midstream, and Mining (UMM) Commodity Market

In order to determine the potential of standardization, the sector needs to better understand how much UMM value is lost from excessive design customization in a commodity market, the cost of added/strained capacity (from standardization), and the fundamental tradeoffs with design standardization.

### BUSINESS IMPERATIVES

Capital Effectiveness

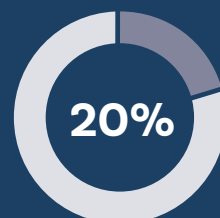
Performance Predictability

Performance Agility

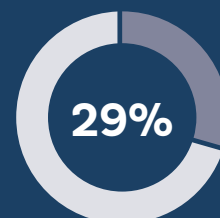
## CONSTRUCTION

### READINESS

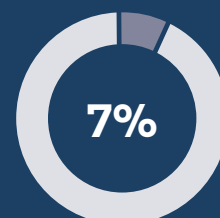
Ready Projects significantly outperform Non-Ready Projects. The key is starting well, communicating expectations and delivering. We need to always be construction-ready.



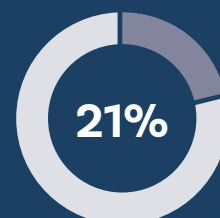
#### COST SAVINGS



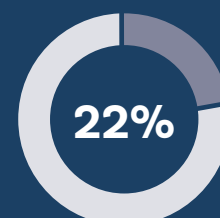
#### PRODUCTIVITY IMPROVEMENT



#### LESS REWORK



#### LESS CHANGE



#### SCHEDULE REDUCTION



## YOUR BUDGET MATTERS

**It's tried and true: Implementing CII's Best Practices eliminates waste and improves productivity.**

Using CII tools and Best Practices dramatically improves the safety, schedule and cost of a capital project. For every \$1 spent on CII Front End Planning (FEP), members report a \$3-\$7 ROI. Members report saving nearly \$5 for every dollar spent on CII's Advanced Work Packaging (AWP).

When used together, FEP and AWP can reduce the cost of a \$100 million project by \$8 million.



For projects using CII Best Practices, the average cost of growth decreased from 6.3% to -1.2%.

Supply Chain Management can provide a savings of 4%-8%.

CII's Project Definition Rating Index tools have a benefit/cost ratio of \$24/1.



## YOUR SAFETY MATTERS

**CII members experience significant improvements in their TRIR and fatality rates, while DART rates remain stable.**

**2017 TRIR**  
**.22**

**15% LOWER THAN 2016 RATE**

**2017 FATALITY**  
**1.25**

**26% LOWER THAN 2016 RATE**

**2017 DART**  
**.09**

**SAME RATE AS 2016**




**CONSTRUCTION INDUSTRY INSTITUTE®**


The University of Texas at Austin


3925 W. Braker Lane (R4500)


Austin, Texas 78759-5316

(512) 232-3000

 [construction-institute.org](http://construction-institute.org)

 Construction Industry Institute

 Construction Industry Institute

 @CIIProjSuccess