



**DBIA  
Mid-Cycle Update Report**

**March 2023**

[fmiconsulting.com](http://fmiconsulting.com)

**DBIA**



# DBIA | Mid-Cycle Update Report

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## Project Overview

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DBIA partnered with FMI to conduct a Mid-Cycle Update to the 2021 Design-Build Utilization Study. To that end, the research provided in this report aims to provide updated information related to the following areas:

1. Design-Build Market Sizing and Growth
2. Design-Build Trends and Drivers

Key elements in the development of this information include:

- Market Modeling and Sizing – FMI developed custom market models based on the research, proprietary internal databases and industry experience.
- Secondary Research – Experienced researchers conducted an extensive search of existing industry data and information, including both print and electronic media.
- Analysis and Documentation – Market observations have been developed based on analysis of the research findings together with the experience of FMI’s research team.

Our research and interpretations are only valid under the assumptions stated in this report and based on the investigations described therein, especially regarding the accuracy of the information based on publicly available sources and interviews/surveys conducted with qualified industry stakeholders and subject matter experts.

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## Forecast Methodology

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*To derive a market forecast, FMI uses a triangulation method that utilizes multiple sources to develop and validate the market's size and direction. The following diagram represents the methodology used for the historical and forecast estimates.*

### **Quantitative Market Model:**

Utilizing multiple historical and forward sources, FMI generated a baseline forecast for construction and put in place spending at the market level for each of the segments examined in this study. This has its foundation in construction spending reported by the Census Bureau and is then forecasted using economic indicators, such as population growth, GDP, unemployment rate, etc. Total construction spending was then segmented to the addressable market of heavy civil services utilizing square-foot cost data by industry subsegment, project-level capital costs, new construction estimates, and other publicly available project cost data.

### **Anticipated Project Examination:**

Utilizing FMI's proprietary project database, CMD Reed, Dodge, and other secondary sources, FMI adjusts the baseline quantitative market model to reflect planned projects over the forecast term. Projects are vetted on the likelihood of occurring based upon the known and anticipated market conditions.



### **Market-Driven Validation:**

FMI then validates and adjusts the market sizing and segmentation forecast as necessary based on primary research conducted with actual market participants and senior FMI consultants. These industry members can speak directly to market conditions and direction based on an intimate knowledge of the individual market and segment.

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## Approach & Sources

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### Step 1: Construction Put in Place (CPiP)

Determining total construction put in place (CPiP) for the *assessed segments*\* is the first and most critical step in estimating the design-build market opportunity. FMI's definitions and historical CPiP estimates match reports released by the U.S. Census Bureau. Five-year CPiP forecasts are modeled and maintained utilizing various resources:

- In-house econometric models analyze trends and predict shifts in construction spending against various demographic and economic drivers.
- Technical in-house publications and subscriptions, including FMI's own Nonresidential Construction Index (NRCI) and construction project databases are utilized to offer insight into each segment considering backlogs, trends influencing demand and various project details.
- FMI's industry relationships and staff expertise/review.

### Step 2: Design-build Construction Put in Place

Next, FMI developed custom market-sizing specifically for design-build construction by segmenting spending into various segment types and Census divisions. Estimates for design-build construction spending were derived through a combination of historical project databases, planned project lists, stakeholder interviews and industry stakeholder surveys.

For this research, design-build was defined as a method to deliver a project in which the design and construction services are contracted by a single entity.

- The use of consistent design-build terminology varied by construction segment (i.e., manufacturing, commercial, etc.). To account for all design-build spending, several variations of design-build were considered and assessed when developing the market-sizing model.
- \*Assessed segments included: religious, public safety, communication, amusement and recreation, lodging, health care, transportation (transit/rail, aviation/airport, marine/port), office, commercial, manufacturing, educational, highway/street, water/wastewater

### Key research sources include, but are not limited to those listed below:

United States Census Bureau

- Construction put in place history

Various Primary and Secondary Resources

- Stakeholder surveys
- Key secondary resources (e.g., ENR, Dodge, McGraw-Hill, REED, IIR, Global Insights, PWF)
- Industry focused associations (e.g., DBIA, ARTBA, AWWA, AIAI)
- Government agency databases (STIP, CIP, project lists)

### Study results/findings

The results of the study were developed through a combination of DBIA provided contacts and FMI internal contacts. In total, 352 survey responses were collected.

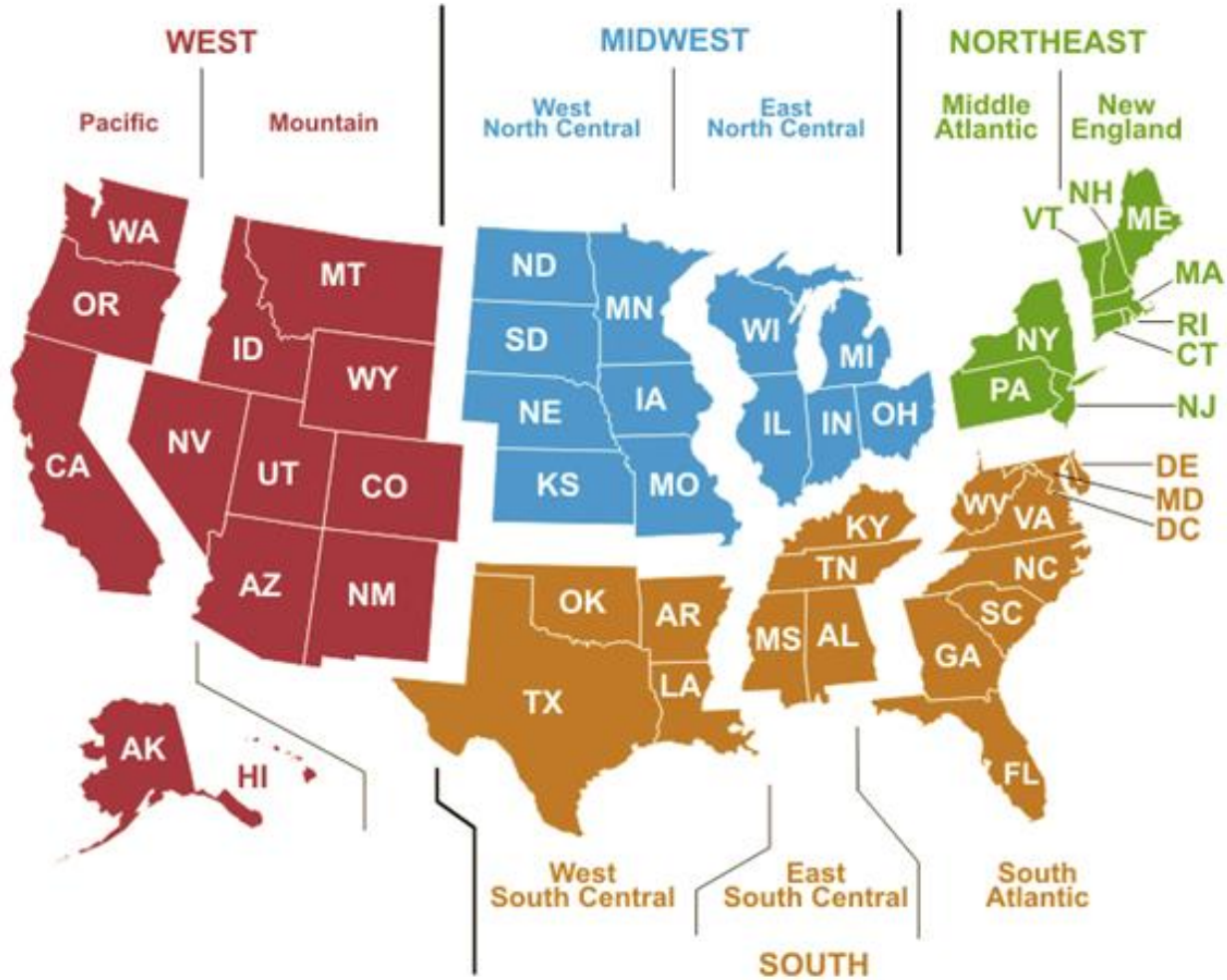
- Firms of all revenue sizes participated on the study. These ranged from ENR top-100 firms to firms with less than \$20 million in annual revenue. The study was unbiased towards firm type, service/product offering or association affiliation.
- Revenue/capital spending of the organizations that participated in the electronic survey nearly \$300 billion.

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## Division & Region Map of United States

### Division Map

Source(s): Census Bureau





**Consulting**

**Executive Summary**

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## Executive Summary

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**Design-build construction spending in the assessed segments and geographies is anticipated to yield a compound annual growth rate (CAGR) of 5.2% over the 2022-2026 forecast period and reach over \$405 billion in 2026.**

- The South Atlantic, West South Central and Pacific regions are anticipated to account for the largest volume of design-build spending over the 2022-2026 forecast period. Additionally, the West South Central (7.0%) and Mid-Atlantic (7.1%) regions are anticipated to yield the highest CAGR over the 2022-2026 forecast period.
- Overall, design-build is anticipated to represent up to 47% of construction spending in the assessed segments and geographies in 2026. Across the assessed segments, highway/street (18%), educational (13%) and manufacturing (14%) are anticipated to represent the greatest percentage of design-build construction spending by segment over the 2022-2026 forecast period.

**As the industry faces increasingly tight labor markets and project constraints, owners and industry firms have taken multiple approaches to addressing retention challenges and offsite construction.**

- The majority (55%) of GC/CM respondents, design-build firms, A/E, specialty trade contractors, and owner's advisor firm respondents believe that design-build assists in addressing talent retention challenges.
- Over three-quarters of survey respondents believe that design-build facilitates greater utilization of prefabrication on projects. Additionally, respondents within institutional, infrastructure, commercial, and manufacturing estimate that over 40% of design-build projects utilize prefabrication.

**The majority of respondents (83%) indicated design-build can help them with supply chain issues over other delivery methods.**

- The majority of respondents indicated that design-build allows earlier procurement of goods and services to facilitate long lead times and collaborate with trades and their fabricators. Earlier procurement and a dynamic and fluid schedule aligns with overall industry strategies to combat supply chain constraints.
- Across contracting approaches, survey respondents indicated guaranteed maximum price, target price and cost plus allowed them to manage cost certainty in a volatile market environment best.



**Consulting**

**Market Sizing**

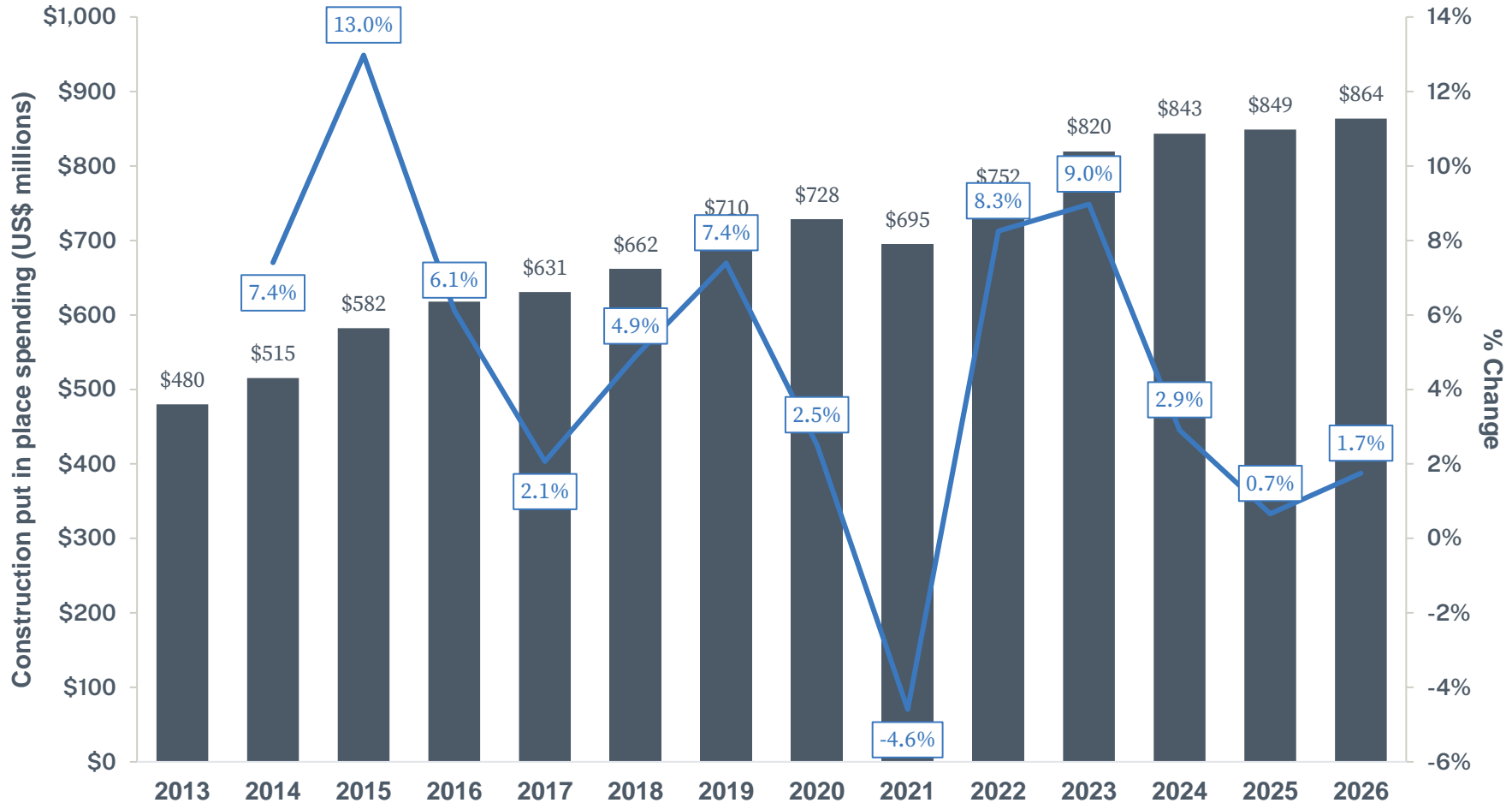


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U.S. construction spending in assessed segments is anticipated to reach over \$850 million in 2026.

## U.S. Construction put in place (assessed segments) 2017 – 2026

Source(s): FMI

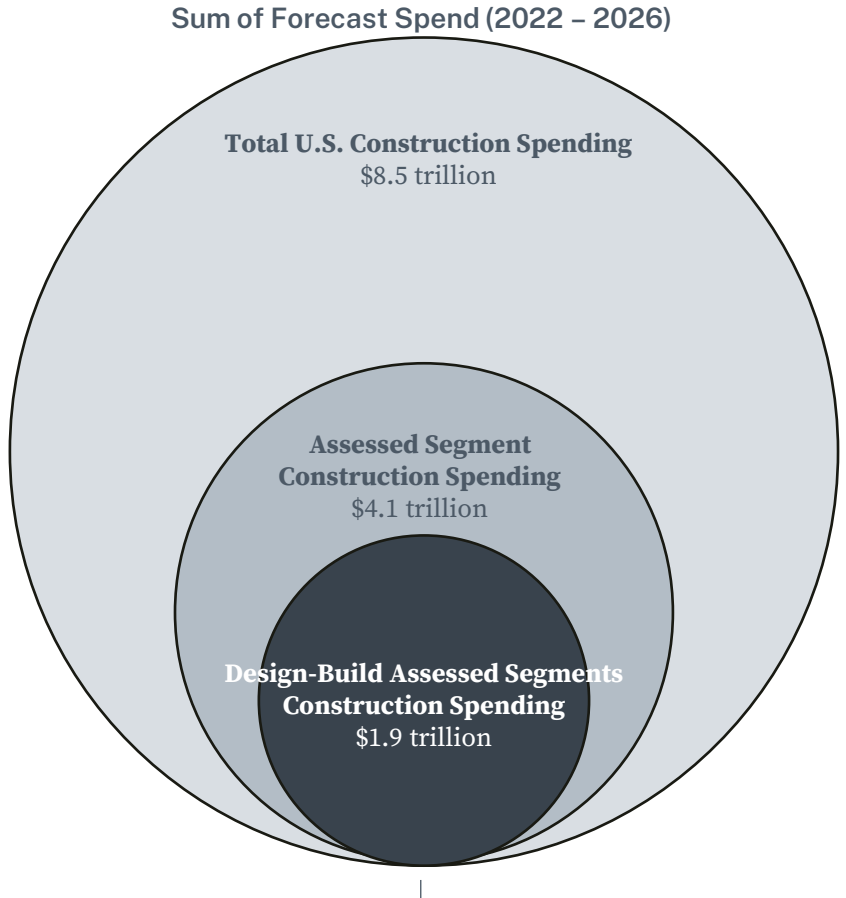


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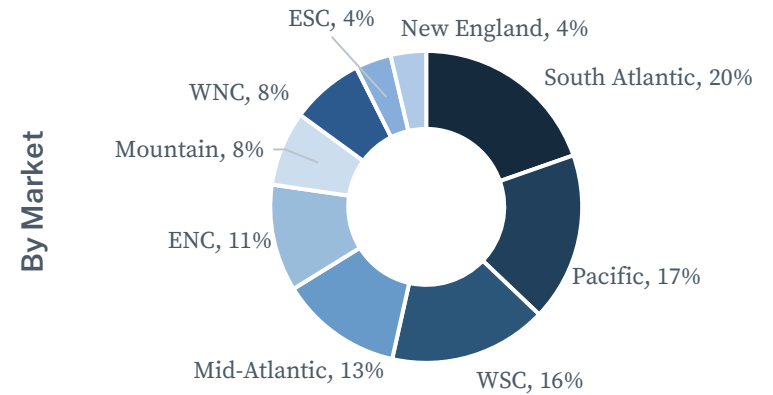
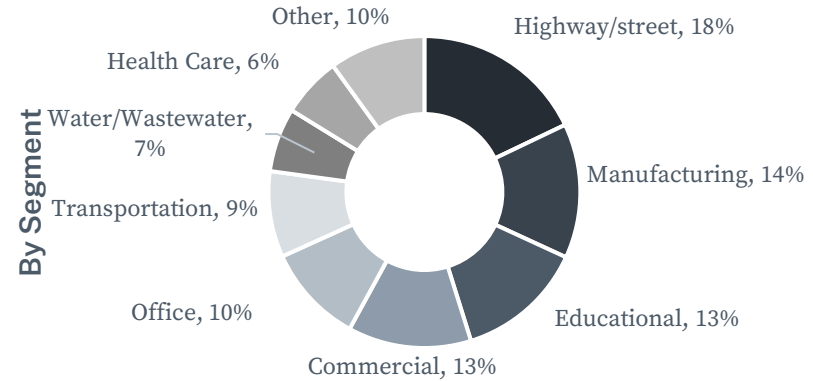
Overall, design-build is anticipated to account for \$1.9 trillion of construction spending in the assessed segments over the 2022 – 2026 forecast period.

## Market Size Comparison

Source(s): FMI



## Distribution of Forecast Spend (2022 – 2026)

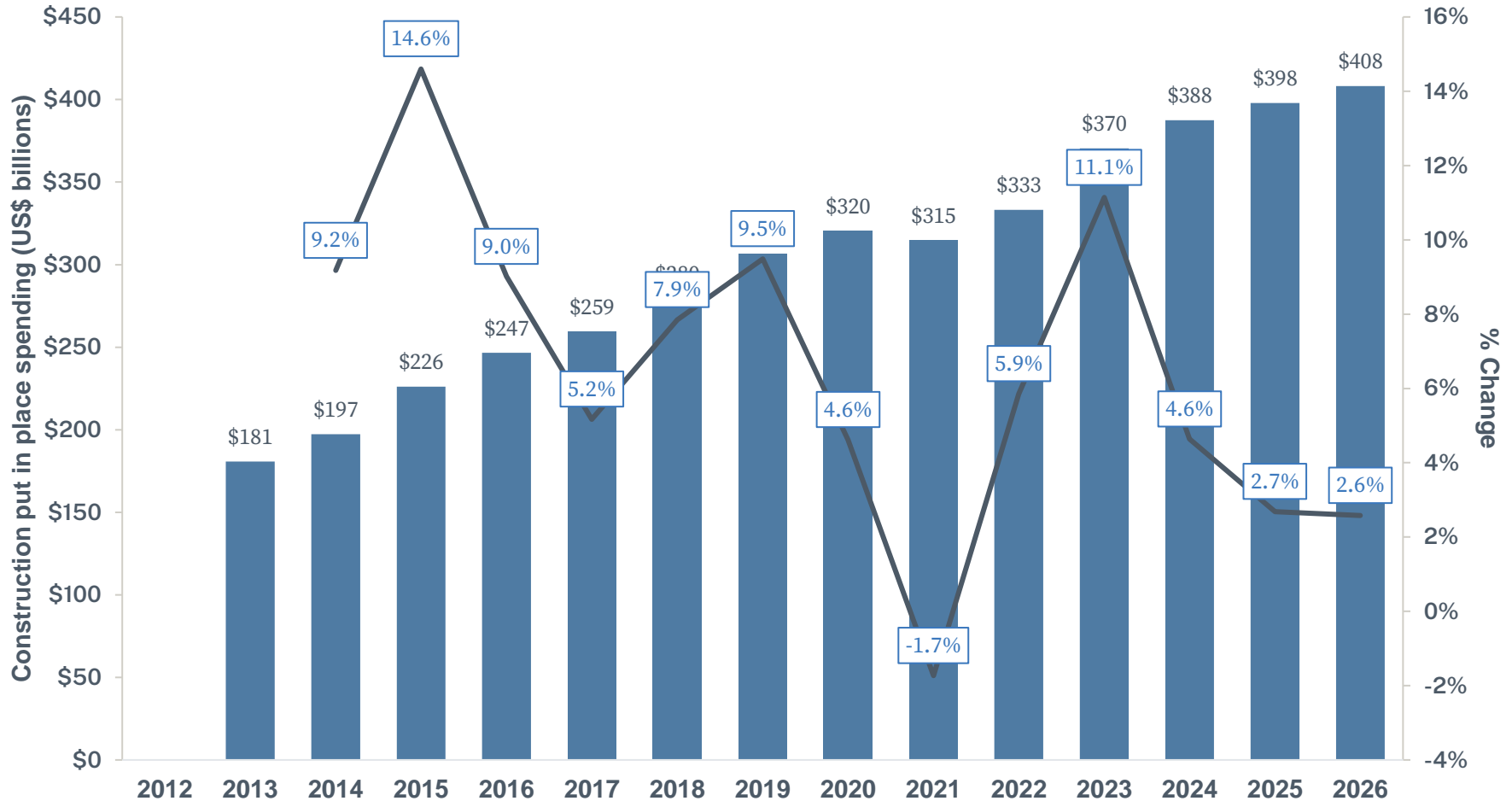


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Design-build construction spending in the assessed segments is anticipated to yield a 5.2% compound annual growth rate from 2022 to 2026.

Design-build construction put in place (assessed segments) 2017 – 2026

Source(s): FMI

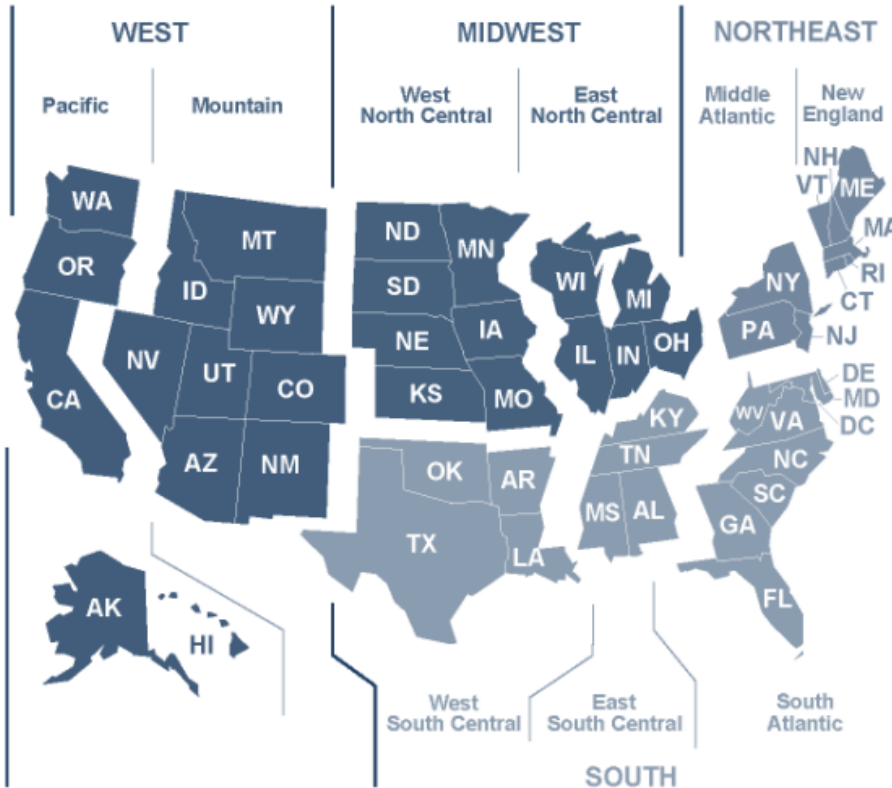


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The South Atlantic, Pacific, and West South Central Census Divisions are anticipated to represent the largest volume of design-build spending over the 2022 – 2026 period.

## Design-build construction put in place by Census Division (Assessed segments)

Source(s): FMI



		<i>Billions of current dollars</i>		<b>CAGR (22-26)</b>
		2022e	2026f	
WEST	Mountain	\$25.7	\$31.3	5.0%
	Pacific	\$60.8	\$69.4	3.4%
MIDWEST	East North Central	\$37.9	\$43.1	3.2%
	West North Central	\$25.5	\$30.9	5.2%
NORTHEAST	New England	\$12.4	\$14.9	4.8%
	Middle Atlantic	\$40.4	\$53.2	7.1%
SOUTH	South Atlantic	\$65.1	\$80.4	5.4%
	East South Central	\$12.8	\$15.4	4.8%
	West South Central	\$53.0	\$69.6	7.0%
<b>U.S. Total</b>		<b>\$333.2</b>	<b>\$408.2</b>	<b>5.2%</b>

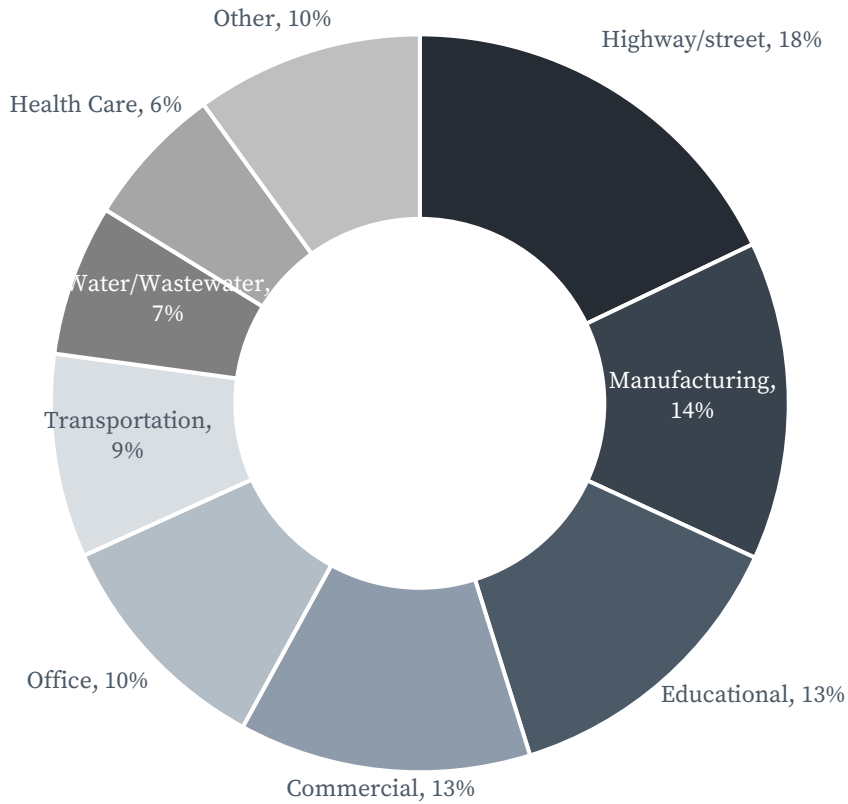
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**Highway/street, educational, and manufacturing are anticipated to hold the greatest share of design-build spending through 2026.**

## Distribution of forecast spending by segment

Combined CPIP spending, 2022-2026

Source(s): FMI

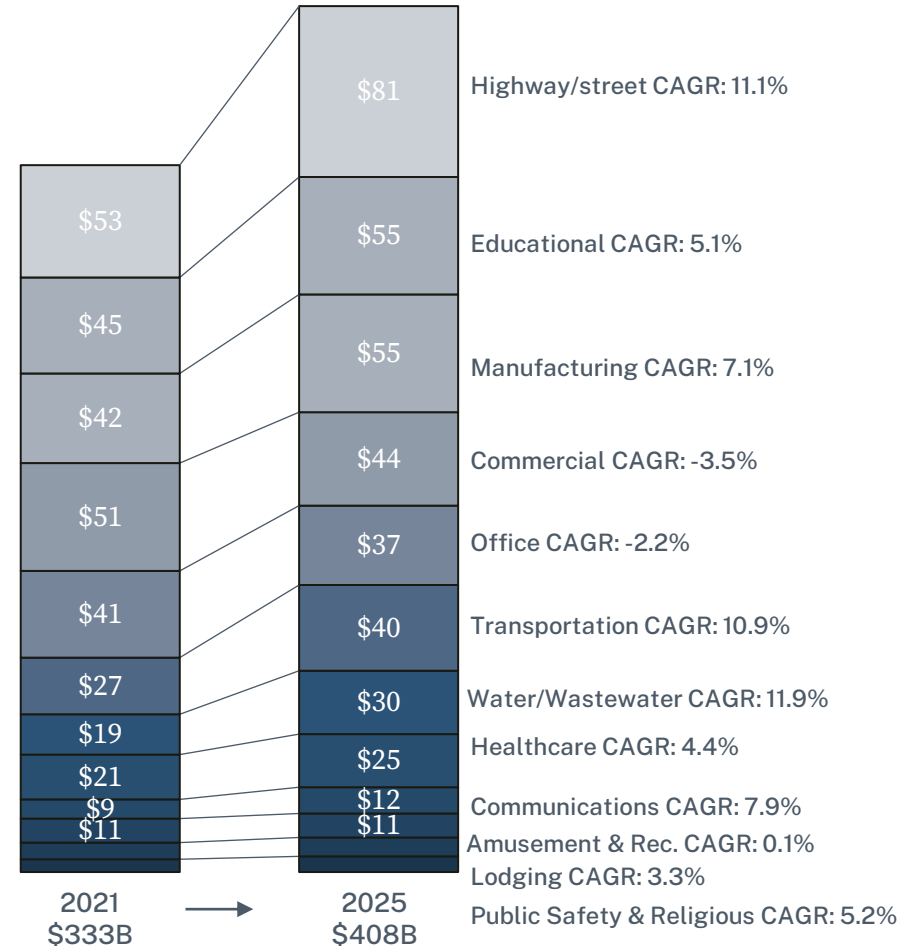


\*Other includes: Public safety, religious, A&R, and lodging

## Distribution of forecast spending by segment

PiP spending, 2022, 2026

Source(s): FMI

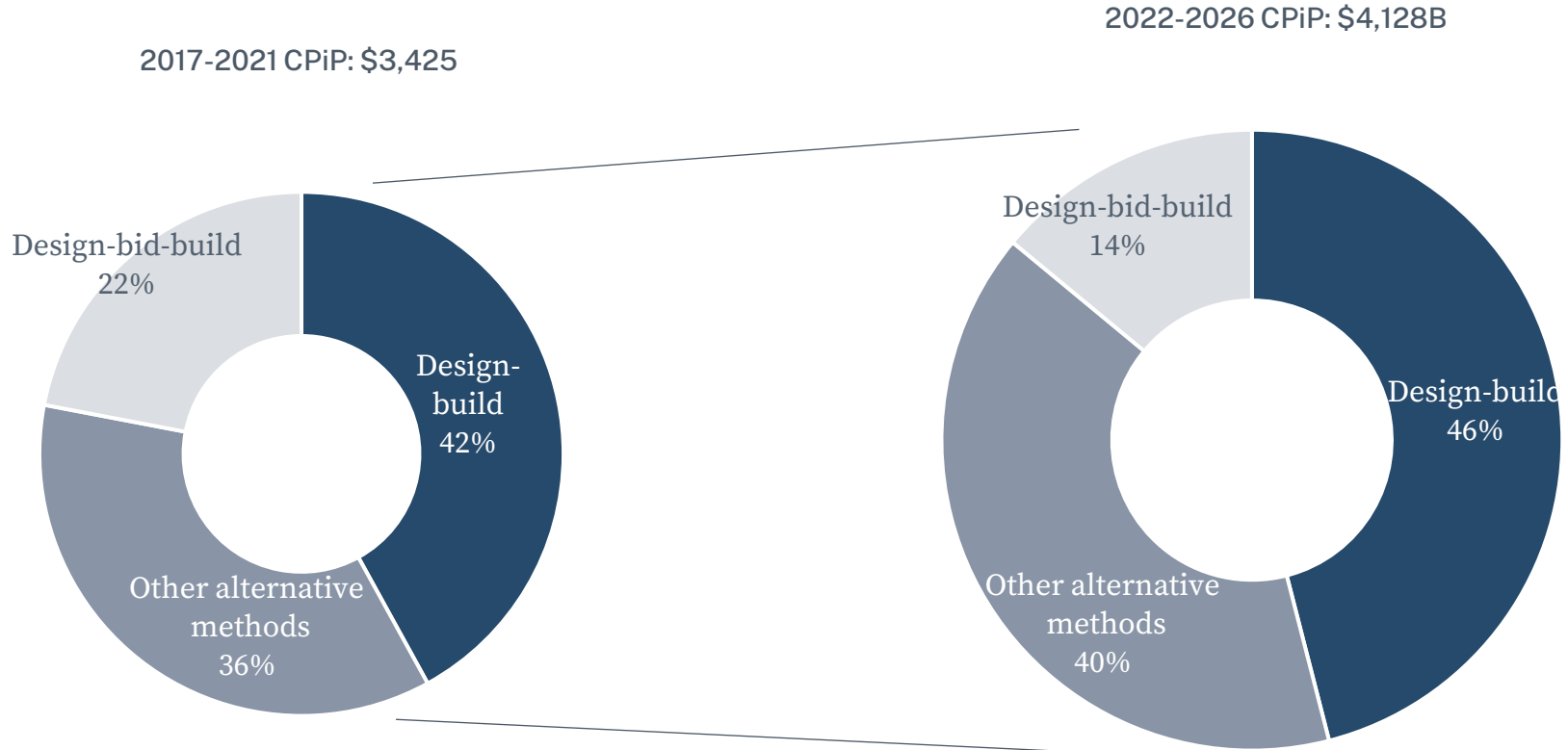


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**Design-build is anticipated to continue to gain share over the forecast period and representing over 47% of spending in 2026.**

## Distribution of delivery method utilization

Source(s): FMI



\*Other alternative methods includes CM/GC, CMAR, EPC and IPD

\*\*Percentages are based on estimated utilization across construction spending.

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Total growth in design-build construction spending is anticipated to be 22.5% from 2022 to 2026.

## Total Growth Comparison

Source(s): FMI

Forecast CPiP by Geography	CPiP 2022 - 2026		
	\$B	CAGR	% of Total
South Atlantic	\$373.3	5.4%	19.7%
Pacific	\$330.1	3.4%	17.4%
West South Central	\$313.2	7.0%	16.5%
Mid-Atlantic	\$240.2	7.1%	12.7%
East North Central	\$209.6	3.2%	11.0%
Mountain	\$146.5	5.0%	7.7%
West North Central	\$143.3	5.2%	7.6%
East South Central	\$71.3	4.8%	3.8%
New England	\$69.8	4.8%	3.7%
<b>Total</b>	<b>\$1,897</b>	<b>5.2%</b>	<b>100%</b>

Forecast CPiP by Segment	CPiP 2022 - 2026		
	\$B	CAGR	% of Total
Highway/street	\$339.9	11.1%	17.9%
Manufacturing	\$265.3	7.1%	14.0%
Educational	\$252.3	5.1%	13.3%
Commercial	\$242.2	-3.5%	12.8%
Office	\$194.7	-2.2%	10.3%
Transportation	\$169.2	10.9%	8.9%
Water/Wastewater	\$126.5	11.9%	6.7%
Health Care	\$118.5	4.4%	6.2%
A&R	\$59.0	0.1%	3.1%
Communication	\$53.1	7.9%	2.8%
Lodging	\$42.7	3.3%	2.3%
Public Safety	\$29.1	5.9%	1.5%
Religious	\$4.8	1.2%	0.3%
<b>Total</b>	<b>\$1,897</b>	<b>5.2%</b>	<b>100%</b>



**Consulting**

**Survey Findings**



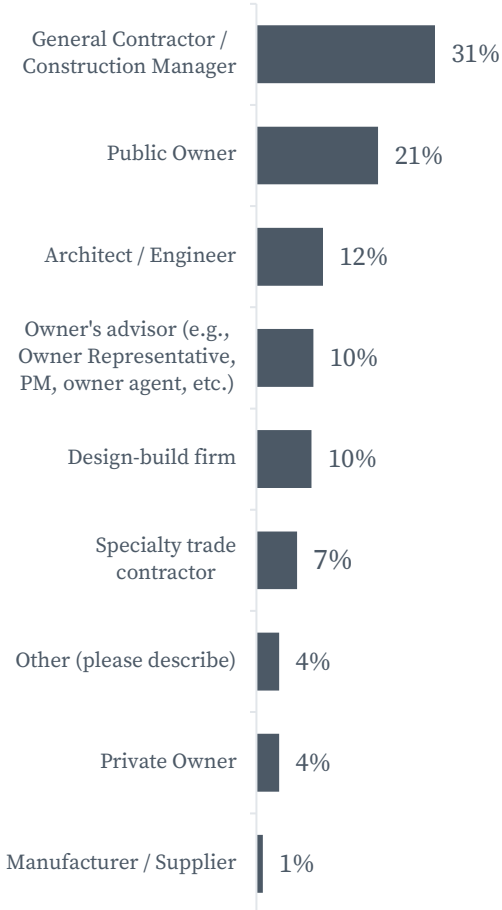
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352 respondents participated in the survey.

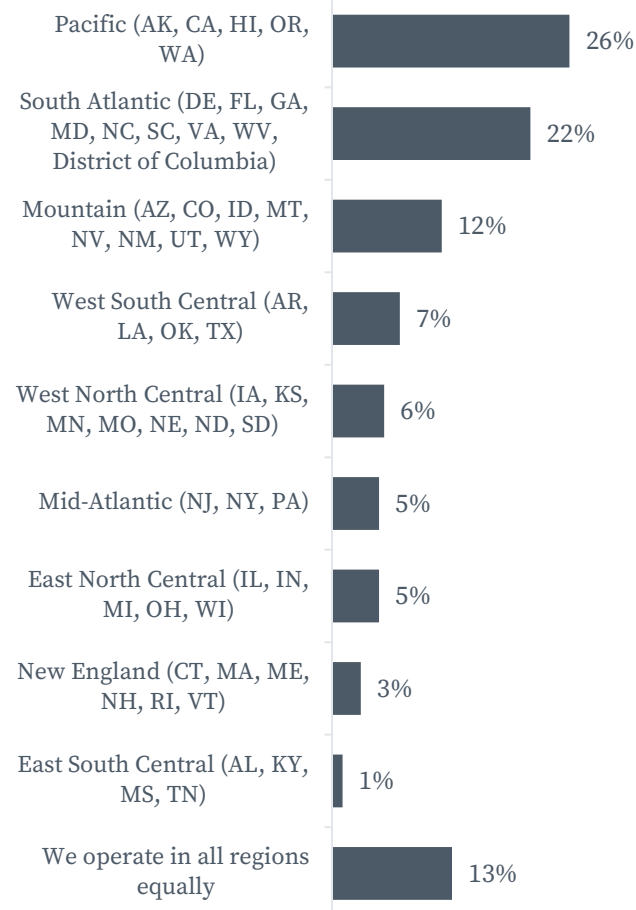
## Respondent Demographics

Source(s): FMI (Average Response)

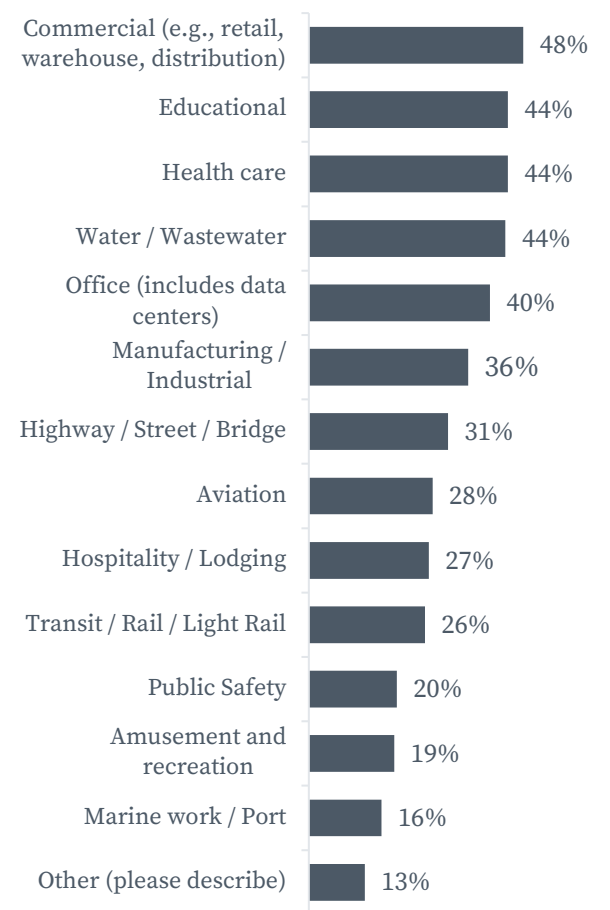
### Organization Type



### Geography



### Segment

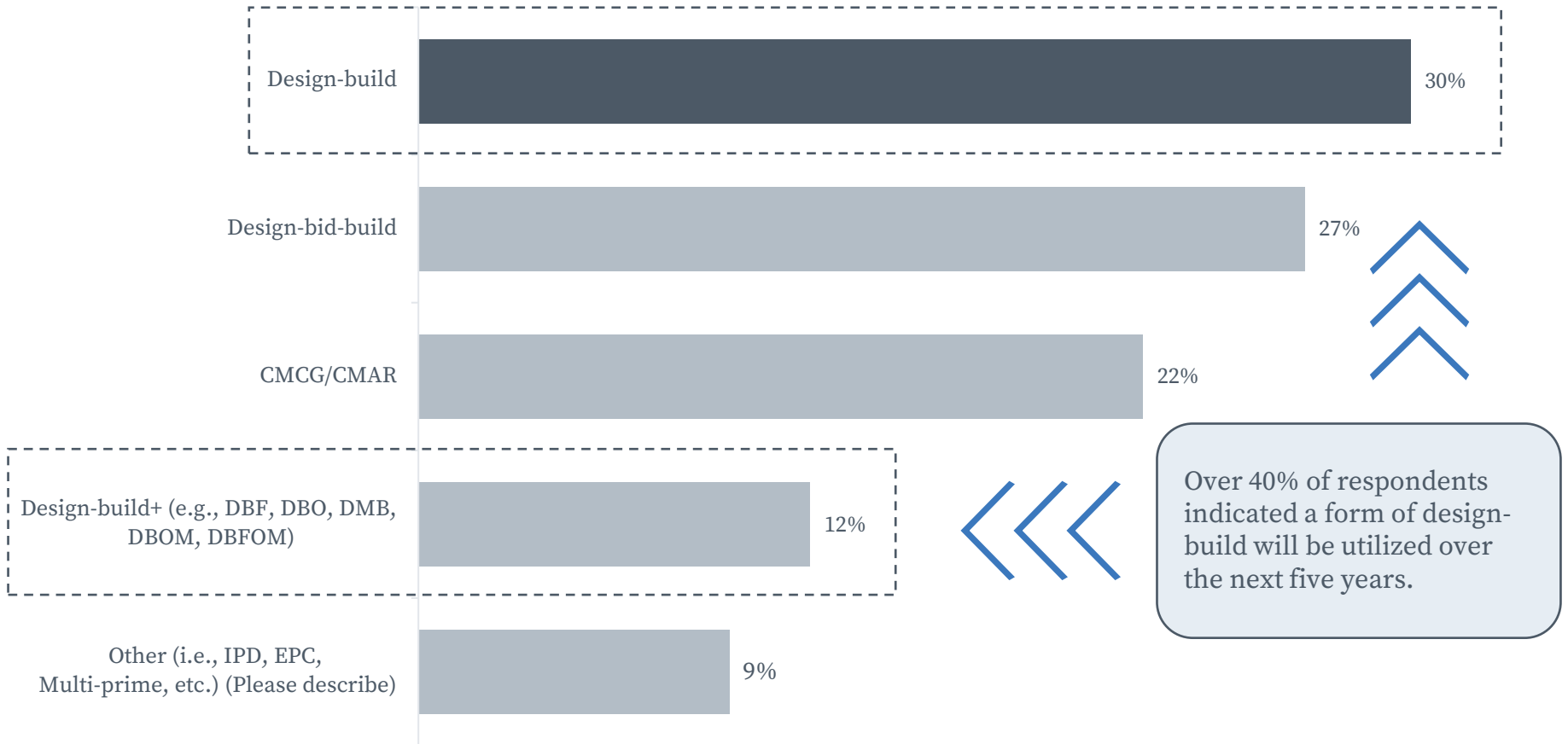


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Respondents perceive design-build to be the most prevalent delivery method over the next five years.

Which of the following project delivery methods does your organization use or anticipates using in the next five years? Select all that apply.

Source(s): FMI (Average Response)



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Design-build is anticipated to be most utilized within the East South Central and Mid-Atlantic regions.

Which of the following project delivery methods does your organization use or anticipates using in the next five years? Select all that apply.

Source(s): FMI (Average Response)

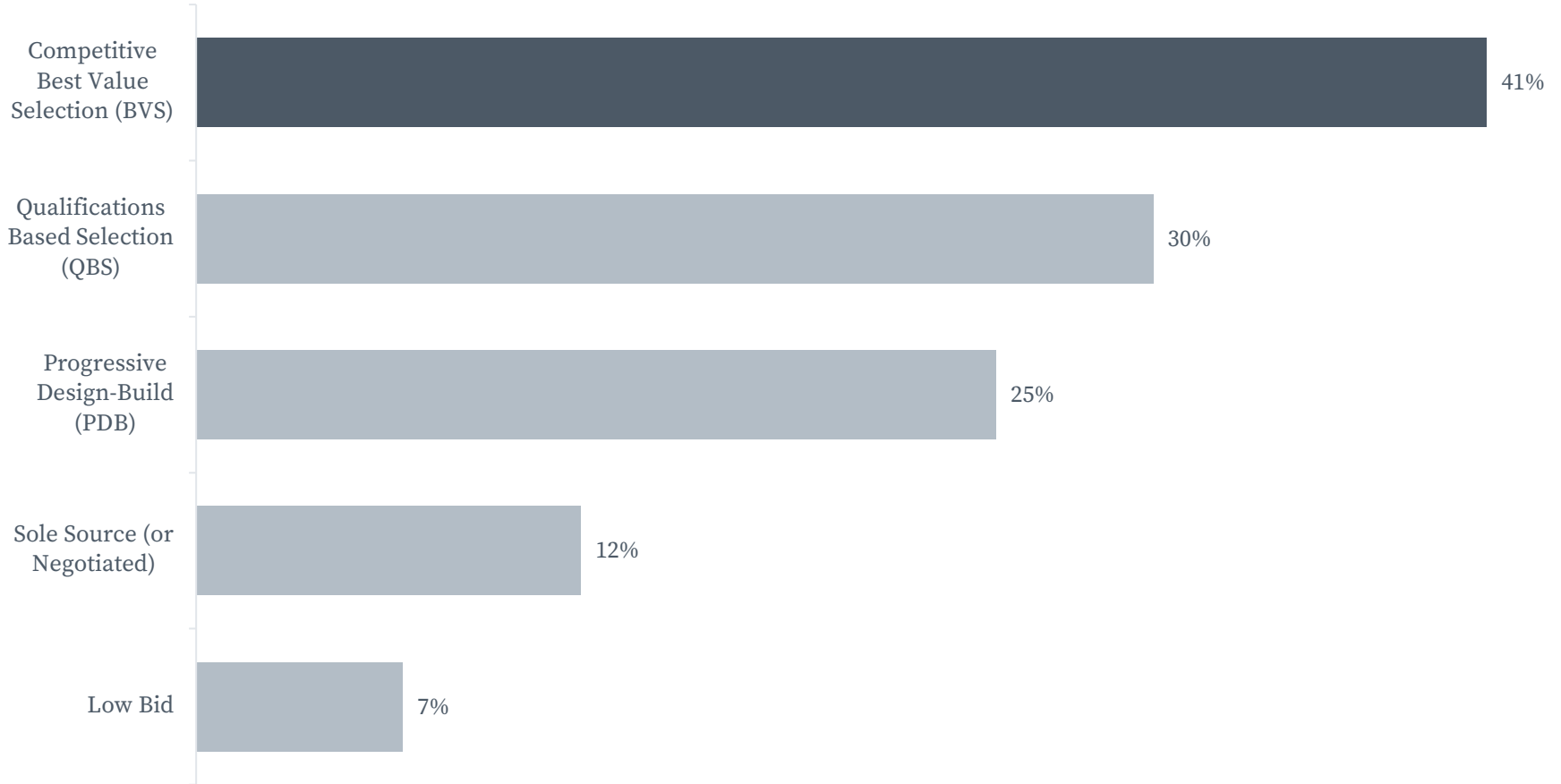
Geography	Design-build	Design-bid-build	CMGC/CMAR	Design-build+	Other
East South Central	40%	40%	20%	0%	0%
Mid-Atlantic	38%	31%	12%	14%	5%
South Atlantic	32%	30%	22%	9%	7%
West North Central	32%	26%	25%	9%	9%
New England	31%	31%	19%	9%	9%
Pacific	31%	27%	20%	11%	11%
West South Central	29%	25%	29%	12%	5%
Mountain	29%	27%	23%	10%	11%
East North Central	27%	24%	22%	17%	10%
We operate in all regions equally	26%	22%	22%	17%	13%

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The majority of design-build projects utilize competitive best-value selection.

What percentage of your design-build projects utilize the following procurement approaches?

Source(s): FMI (Average Response)



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**East South Central, Mid-Atlantic, and West South Central most frequently utilize competitive best-value selection for design-build projects.**

**What percentage of your design-build projects utilize the following procurement approaches?**

*Source(s): FMI (Average Response)*

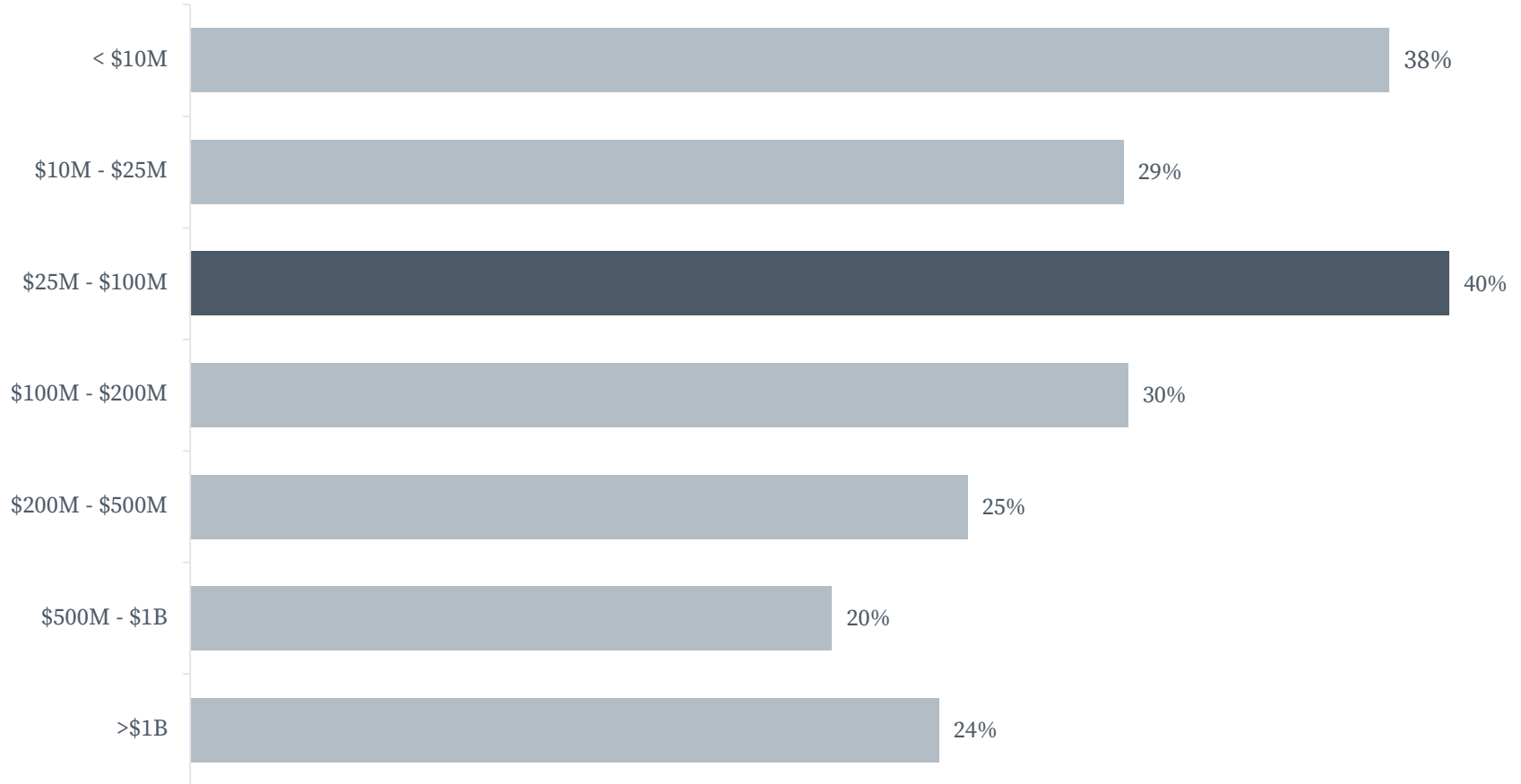
Geography	Competitive Best-Value Selection	Qualifications Based Selection	Progressive Design-Build	Sole Source (or negotiated)	Low Bid
East North Central	35%	27%	18%	12%	8%
East South Central	55%	20%	5%	20%	0%
Mid-Atlantic	55%	20%	23%	6%	5%
Mountain	42%	35%	24%	14%	7%
New England	28%	26%	24%	23%	2%
Pacific	40%	31%	28%	11%	8%
South Atlantic	37%	33%	26%	11%	7%
West North Central	27%	27%	36%	10%	8%
West South Central	57%	29%	29%	15%	7%
We operate in all regions equally	42%	31%	22%	14%	1%

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While design-build is utilized across projects with varying values, it is predominantly used in projects between \$25 million and \$100 million.

On projects utilizing design-build, what percentage of design-build projects were in the following value ranges?

Source(s): FMI (Average Response)



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Across geographic regions, design-build is predominantly used on projects under \$200 million.

On projects utilizing design-build, what percentage of design-build projects were in the following size ranges?

Source(s): FMI (Average Response)

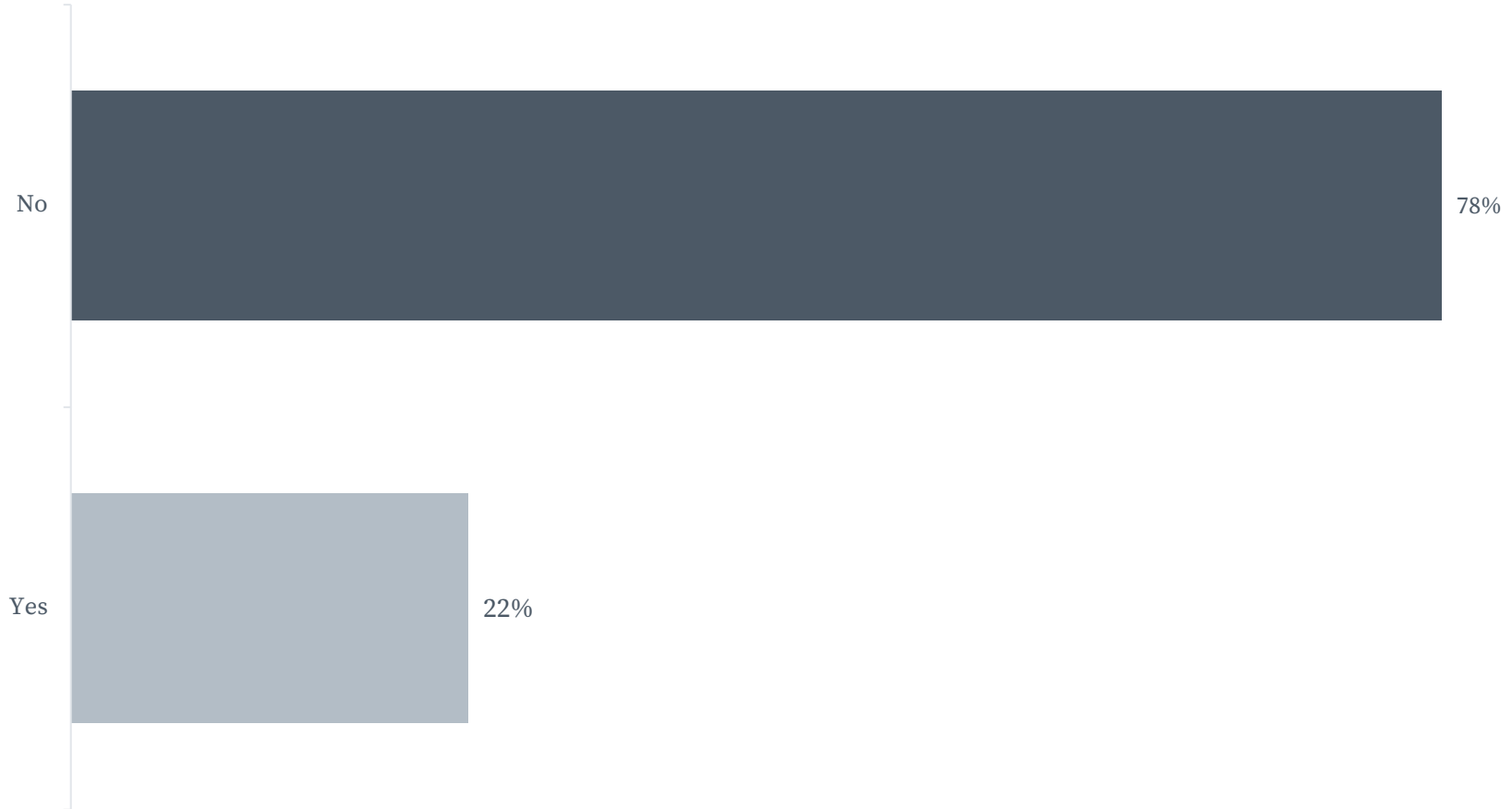
Geography	< \$10M	\$10M - \$25M	\$25M - \$100M	\$100M - \$200M	\$200M - \$500M	\$500M - \$1B	> \$1B
East North Central	20%	34%	32%	27%	23%	42%	53%
East South Central	63%	30%	63%	25%	0%	0%	0%
Mid-Atlantic	29%	27%	59%	32%	35%	13%	53%
Mountain	52%	34%	36%	29%	29%	9%	3%
New England	55%	28%	34%	40%	38%	0%	0%
Pacific	37%	30%	43%	31%	26%	20%	33%
South Atlantic	44%	27%	45%	26%	24%	35%	23%
West North Central	46%	34%	33%	32%	32%	10%	5%
West South Central	37%	36%	39%	29%	20%	14%	5%
We operate in all regions equally	18%	21%	29%	31%	19%	21%	18%

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**Most respondents did not indicate that the recent market environments have required changes to bonding / insurance on large-scale design-build projects.**

**Has the recent market environment required changes to your bonding / insurance on large-scale design-build projects (e.g., projects over \$100 million)?**

*Source(s): FMI (Average Response)*



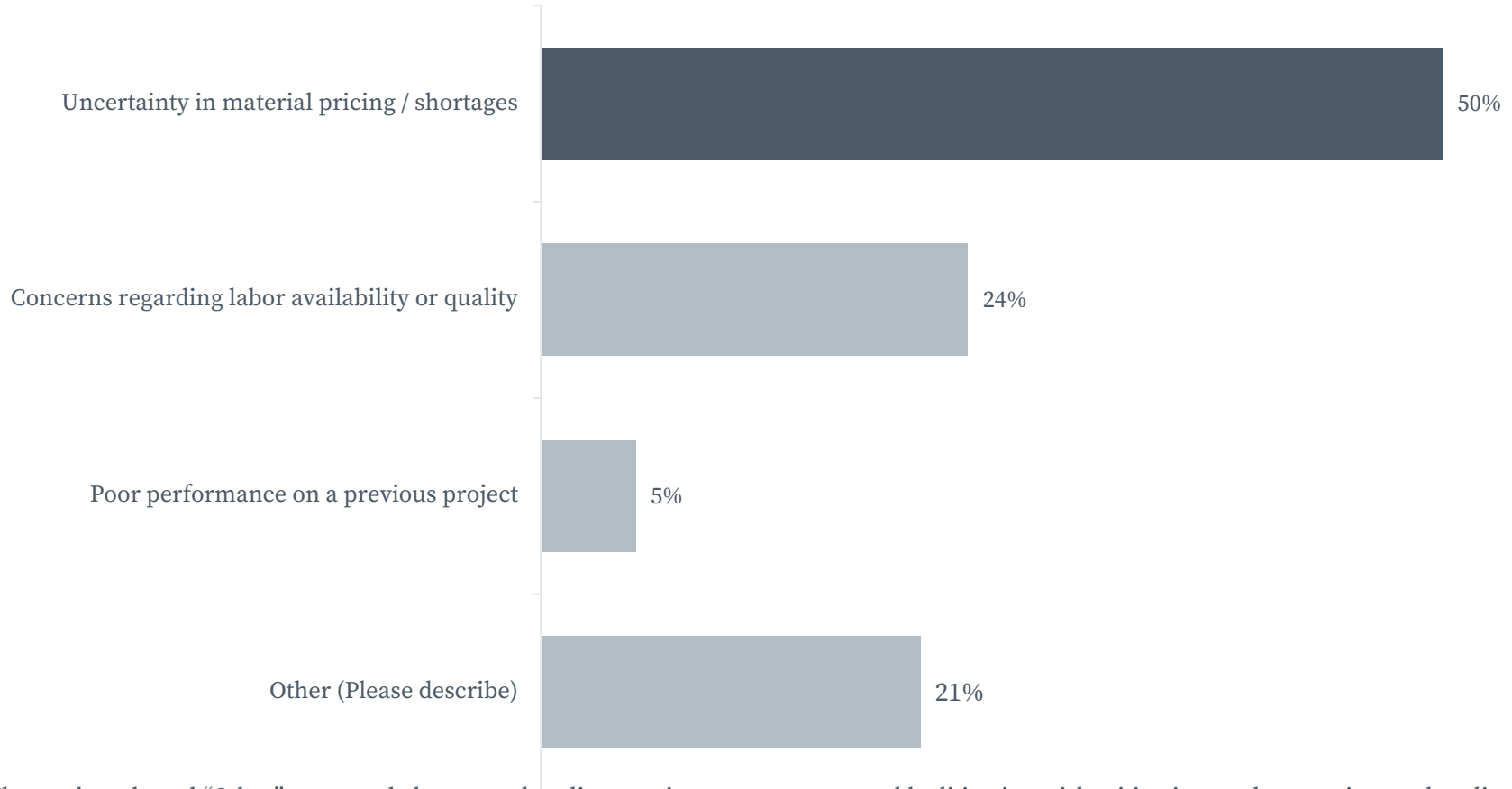


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**Respondents identified uncertainty in material pricing / shortages as a primary factor in causing changes to bonding / insurance requirements.**

**What factors are causing changes in these requirements?**

*Source(s): FMI (Average Response)*



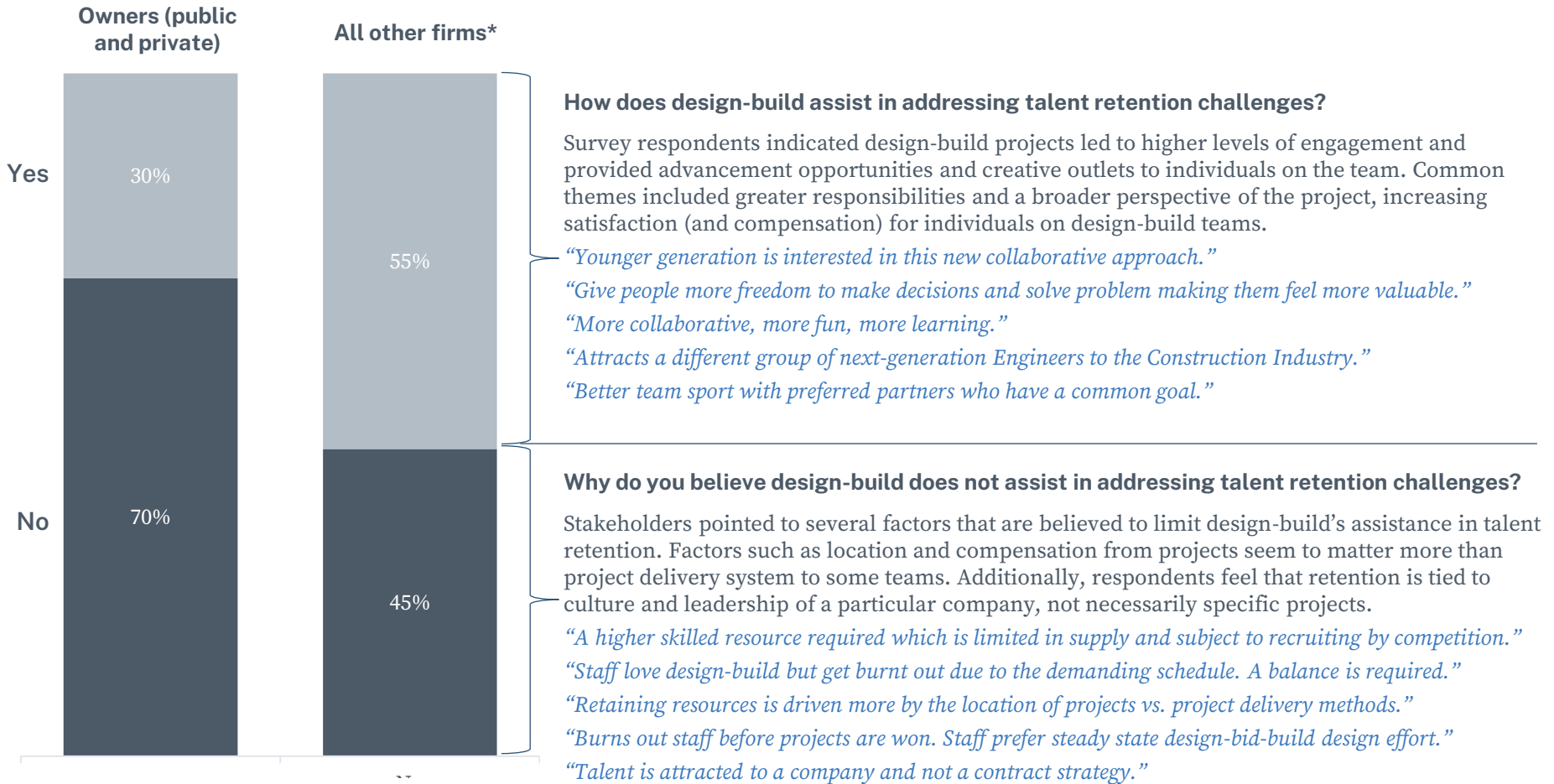
Those who selected “Other” suggested changes to bonding requirements were caused by litigation, risk mitigation, and constraints on bonding capacity.

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**Owner respondents seem to doubt design-build’s impact on talent retention, while all other respondent types firmly believe design-build assists in addressing talent retention challenges.**

**Does design-build assist in addressing talent retention challenges?**

Source(s): FMI (Average Response)

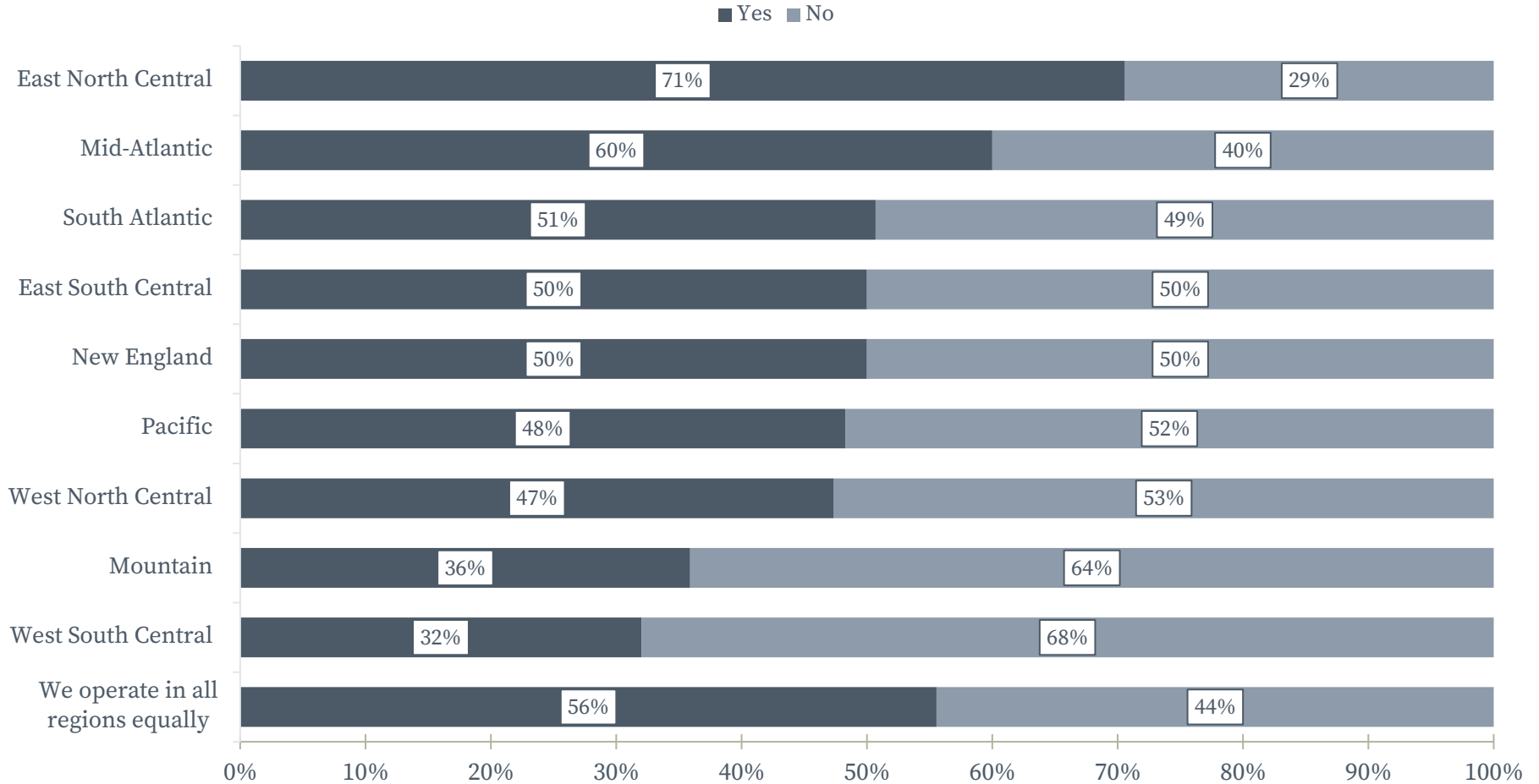


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East North Central and Mid-Atlantic regions more commonly believe that design-build assists in addressing talent retention challenges.

Does design-build assist in addressing talent retention challenges?

Source(s): FMI (Average Response)

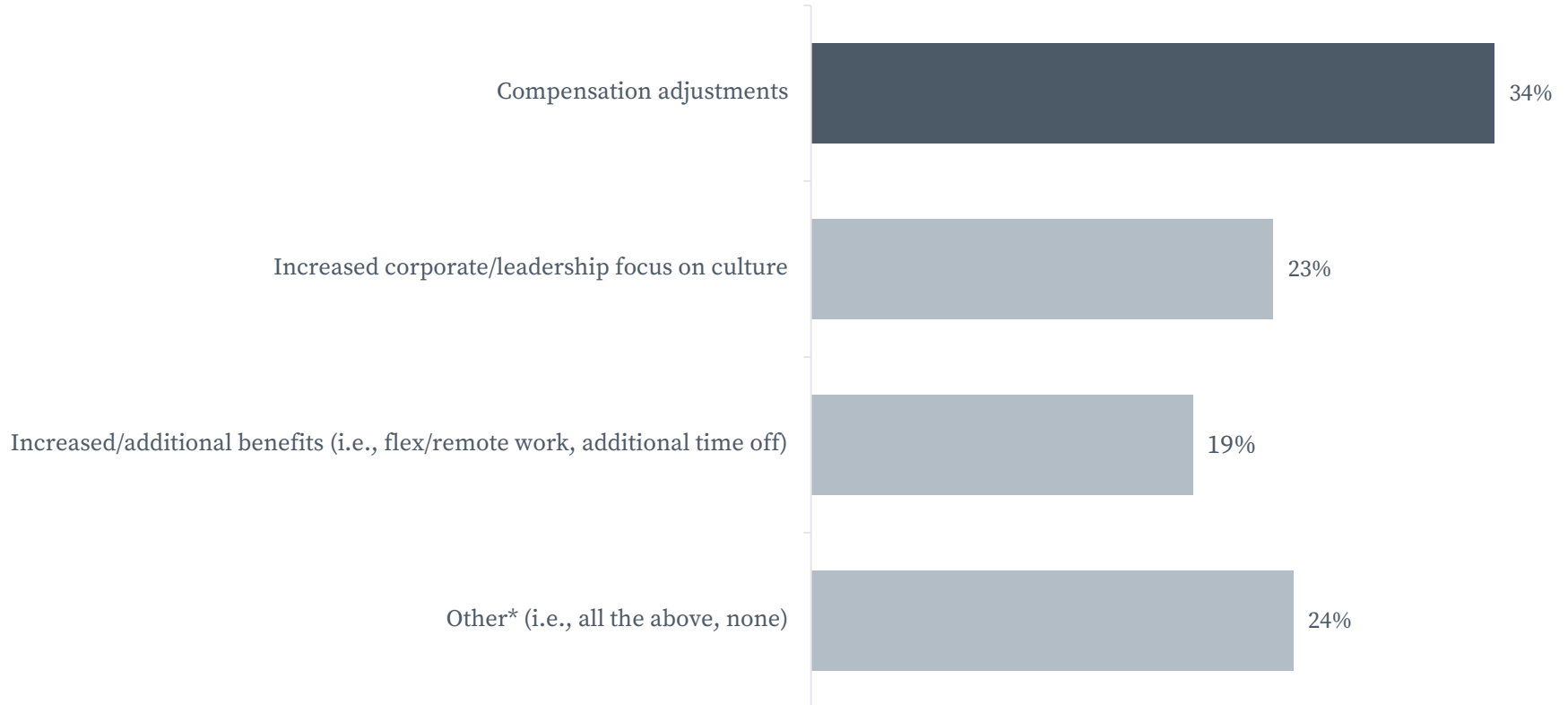


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**More than a third of organizations have adjusted compensation to increase talent retention while one out of five organizations increased focuses on culture or benefits.**

**What steps has your organization taken to address talent retention challenges?**

Source(s): FMI (Average Response)



\*67% of those who selected Other wrote in their answer as all three solutions being taken with another 19% responding nothing is being done.

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Stakeholders adjust compensation the most to retain talent followed by increasing or adding employee benefits.

What steps has your organization taken to address talent retention challenges?

Source(s): FMI (Average Response)

Stakeholder	Compensation Adjustments	Increased/Additional Benefits (e.g., flex/remote work)	Increased Corporate/Leadership Focus on Culture	Other* (Please Describe)
Owners (Public + Private)	27%	30%	15%	29%
General Contractor / Construction Manager	39%	16%	26%	19%
Design-Build Firm	38%	13%	9%	25%
Specialty Trade Contractors	35%	0%	23%	22%
Architect / Engineer	29%	23%	9%	23%
Owner's Advisor (e.g., Owner Rep, PM, Owner Agent)	22%	33%	9%	22%

\*67% of those who selected Other wrote in their answer as all three solutions being taken with another 19% responding nothing is being done.

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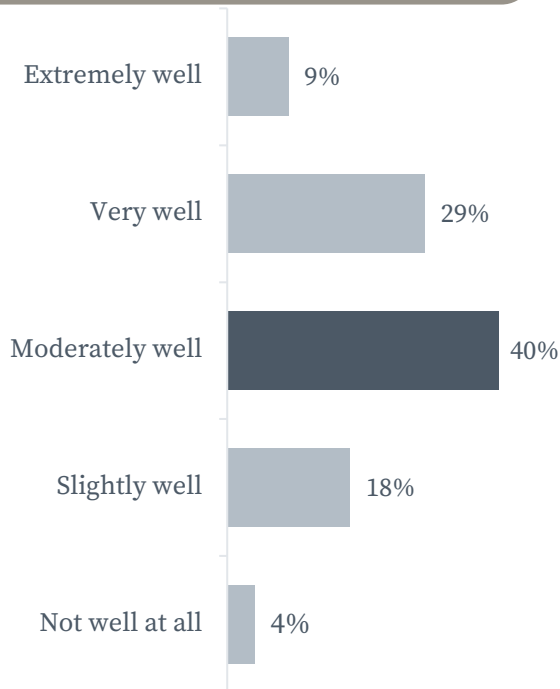
Prefabrication is seen as an advantage in design-build projects for over three fourths of respondents.

## Design Build Prefabrication

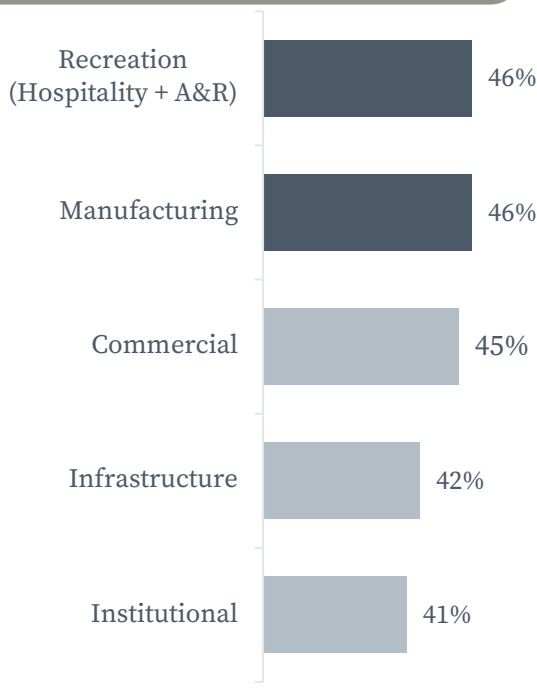
Source(s): FMI (Average Response)

The majority of respondents indicated that design-build can increase prefabrication use in projects. Participants also stated almost half of recreation, manufacturing, and commercial projects are utilizing some form of prefabrication construction. Additionally, all segments have at least a third of their projects using off-site construction. Approximately a quarter of recreation projects use prefabrication whereas one in five projects in all the segments use off-site construction in some format.

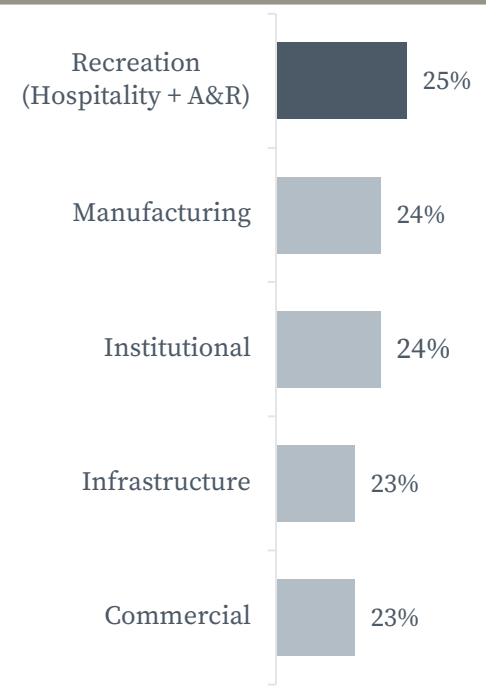
### How well does design-build facilitate greater prefabrication on projects?



### What percentage of your design-build projects are utilizing prefabrication?



### Of projects that utilize prefabrication, what percentage of the project is prefabricated?



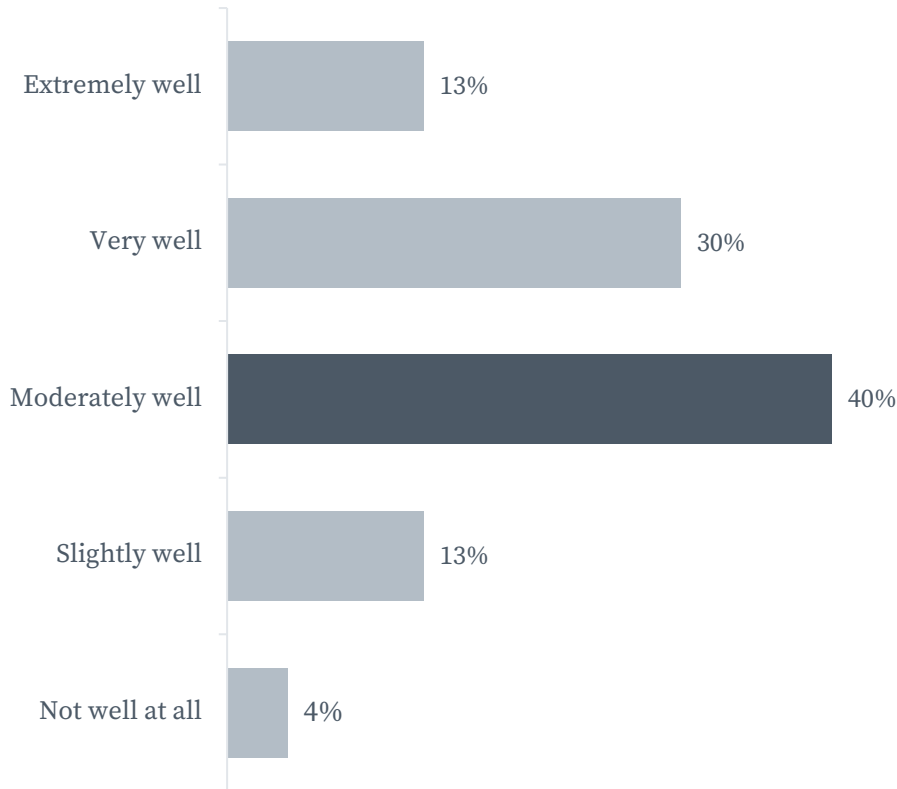
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Over three quarters of surveys agreed supply chain issues can be addressed with the use of design-build projects.

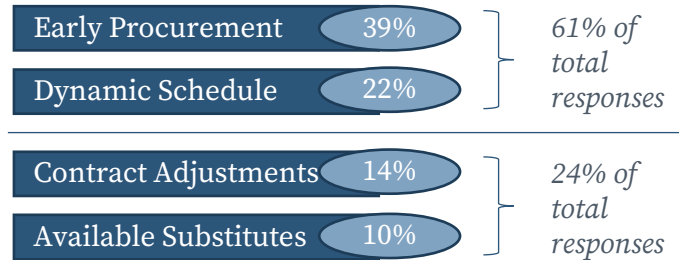
## How well does design-build help teams address supply chain issues compared to other delivery methods?

Source(s): FMI (Average Response)

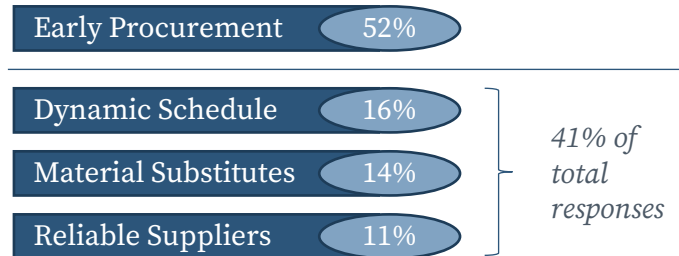
The majority of respondents indicated design-build can help them with supply chain issues over other delivery methods. When asked why that is, over half responded that it allows earlier procurement of goods and services to facilitate long lead times and collaborate with trades and their fabricators. This earlier procurement and a dynamic and fluid schedule aligns with overall industry strategies to combat supply chain constraints agnostic of design method.



## What methods have you used to address global supply chain issues?



## How has the design-build delivery method enabled your organization to better address global supply chain issues?

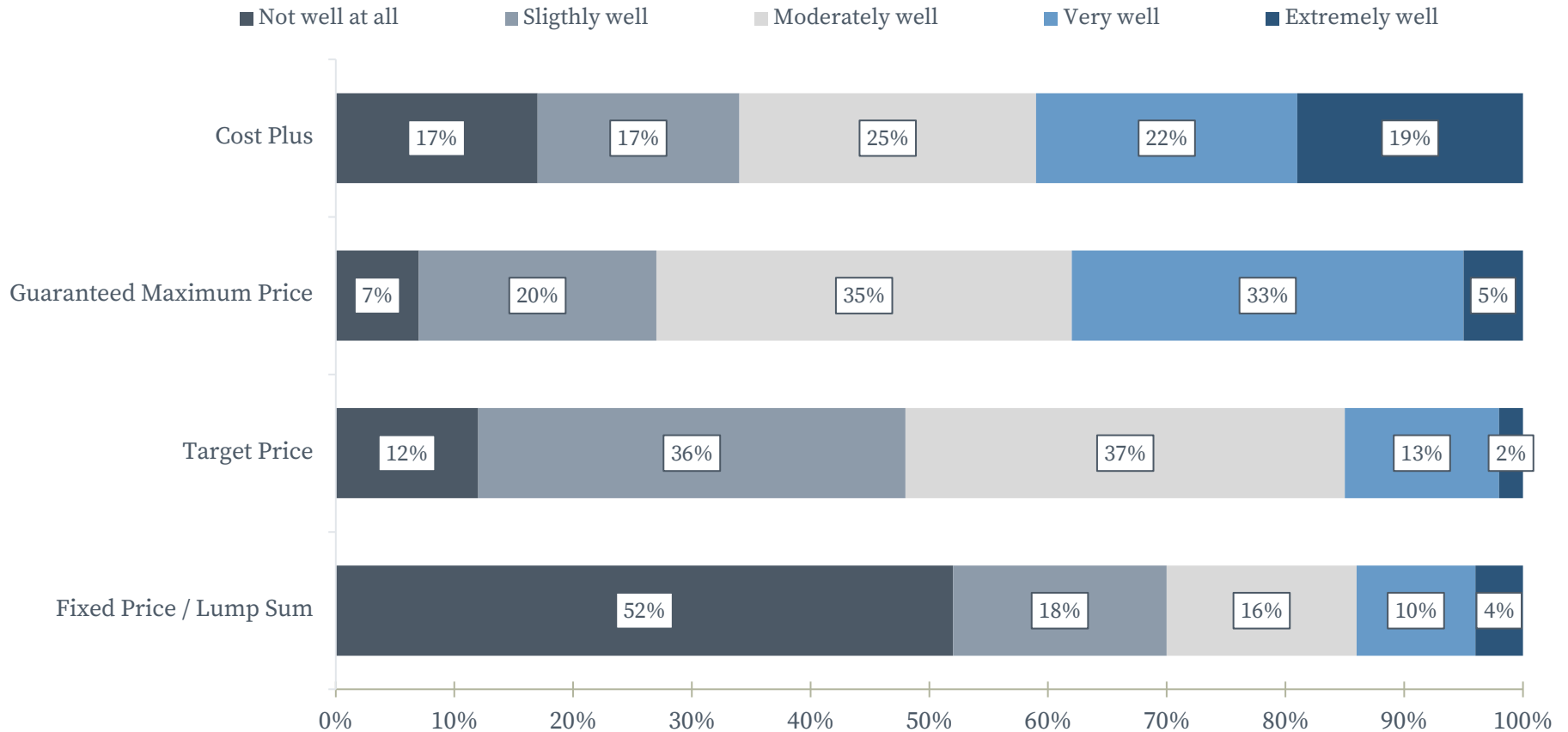


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Survey respondents experience improved cost control for GMP, target price, and cost plus, while fixed price/lump sum is viewed as the most difficult contract to manage costs.

How do the following contracting approaches address the ability to manage cost certainty in a volatile market environment?

Source(s): FMI (Average Response)



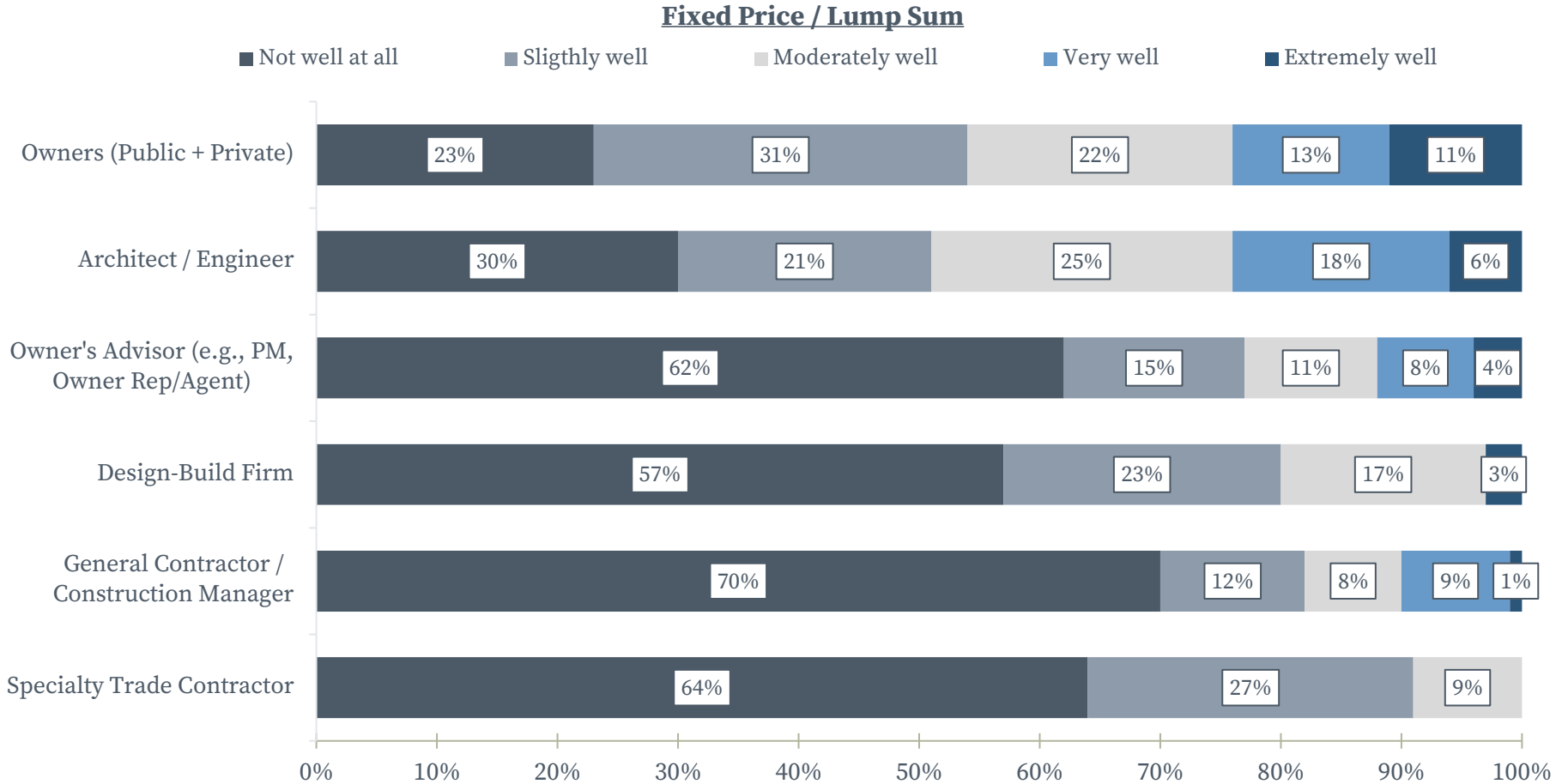


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There is a majority of poor sentiment for fixed price / lump sum contracts managing project costs well with owners and their advisors expressing the most positive views.

How does a **fixed price / lump sum** contract approach address the ability to manage cost certainty in a volatile market environment?

Source(s): FMI (Average Response)



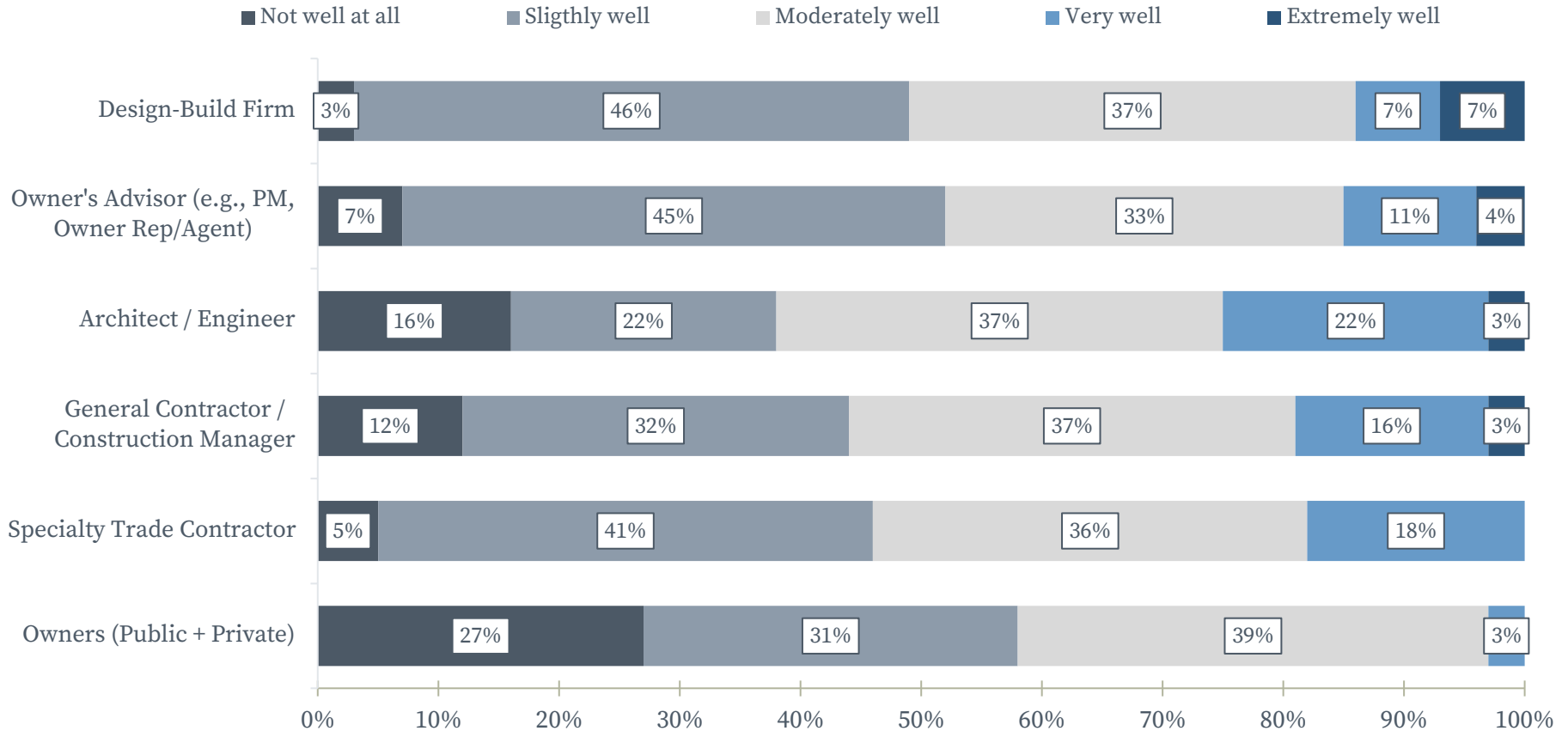
# DBIA | Mid-Cycle Update Report

Survey respondents experience moderate satisfaction with target price contracts controlling project costs with design-build firms displaying the highest positive sentiment.

How does a target price contract approach address the ability to manage cost certainty in a volatile market environment?

Source(s): FMI (Average Response)

## Target Price Contract

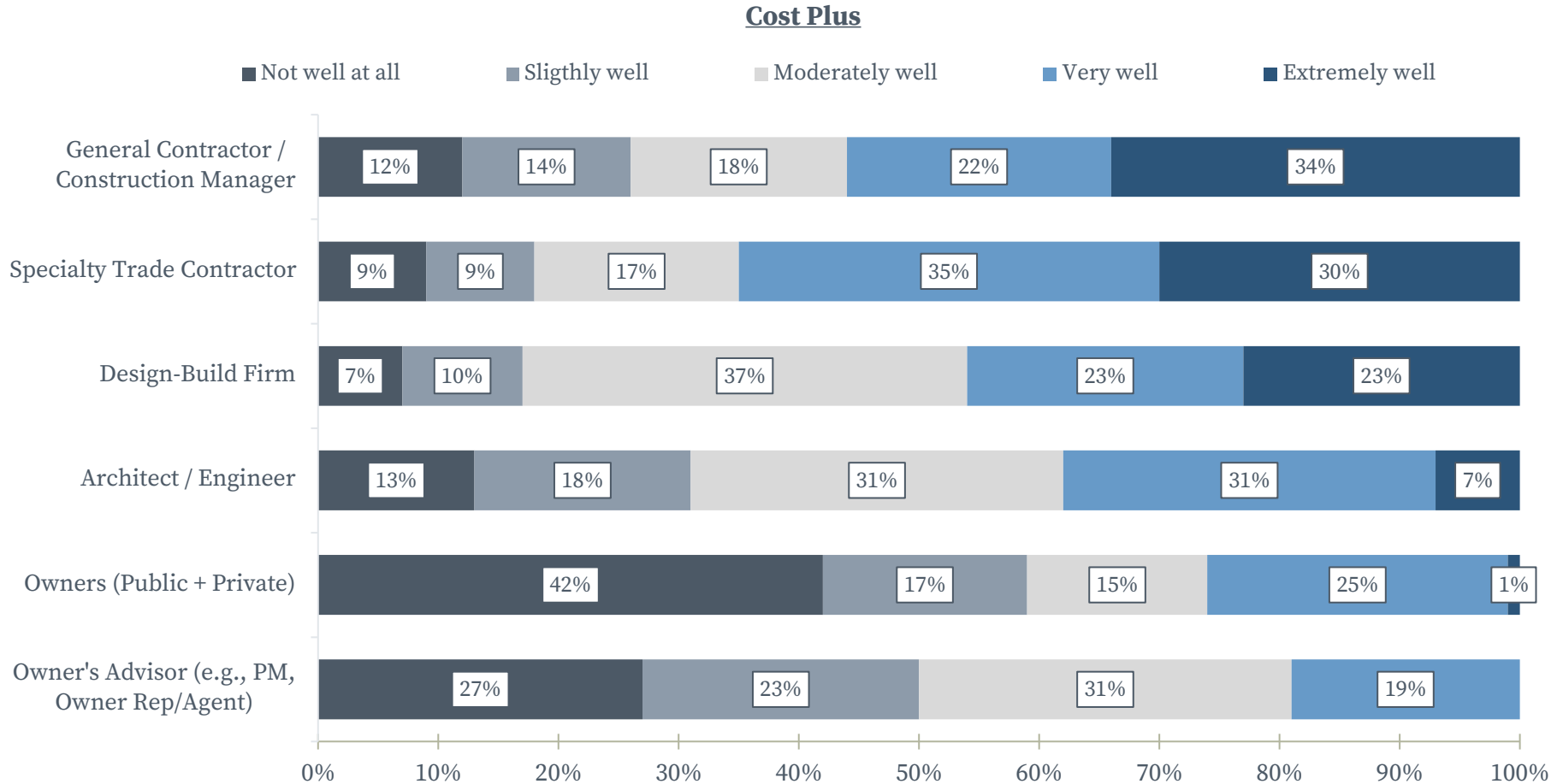


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**Cost-plus contracts are viewed positively to manage project costs from general contractors / construction managers, trade contractors, and the design community.**

**How does a cost-plus contract approach address the ability to manage cost certainty in a volatile market environment?**

Source(s): FMI (Average Response)



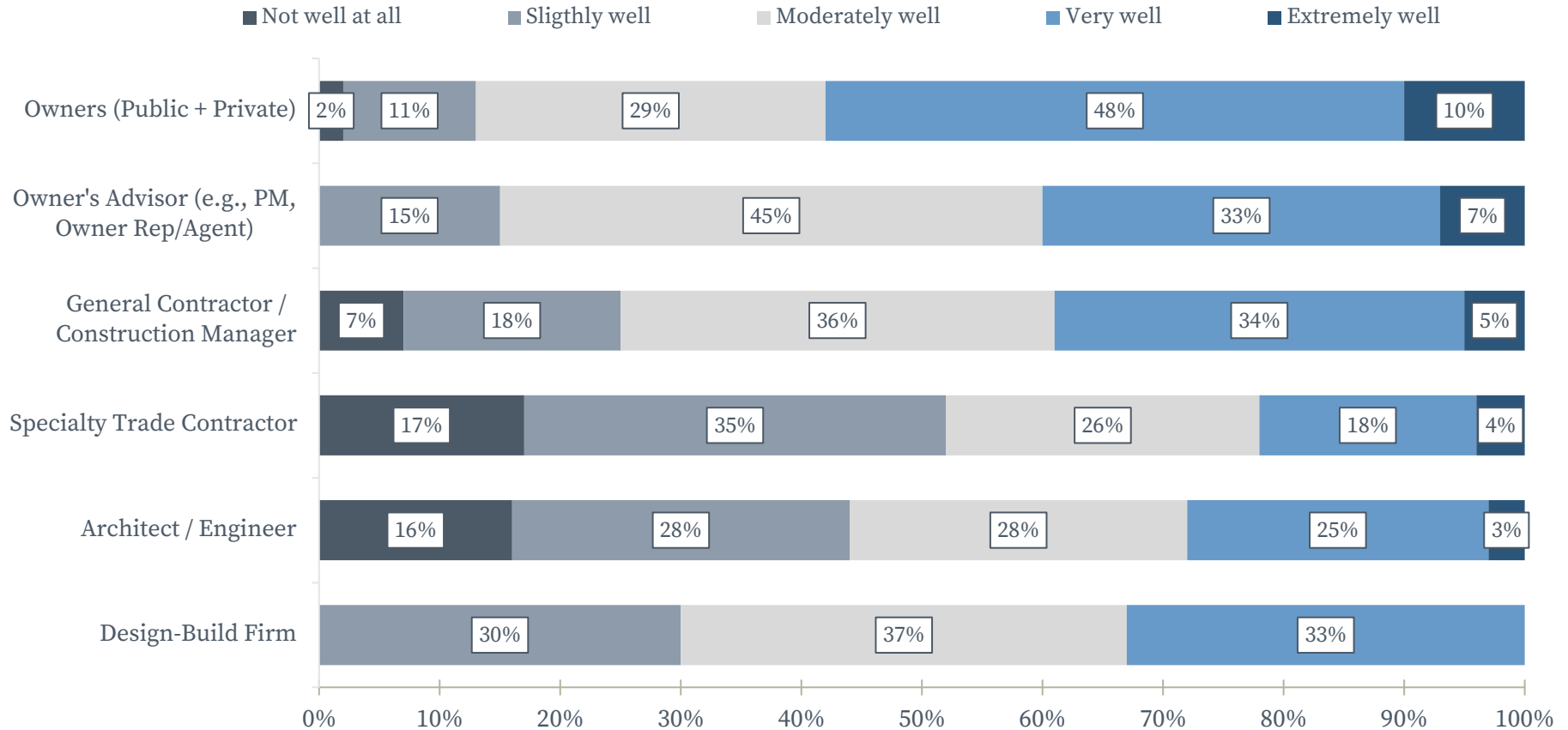
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The guaranteed maximum price contract works well to control project costs for owners, their advisors, and general contractors / construction managers.

How does a guaranteed maximum price contract approach address the ability to manage cost certainty in a volatile market environment?

Source(s): FMI (Average Response)

## Guaranteed Maximum Price

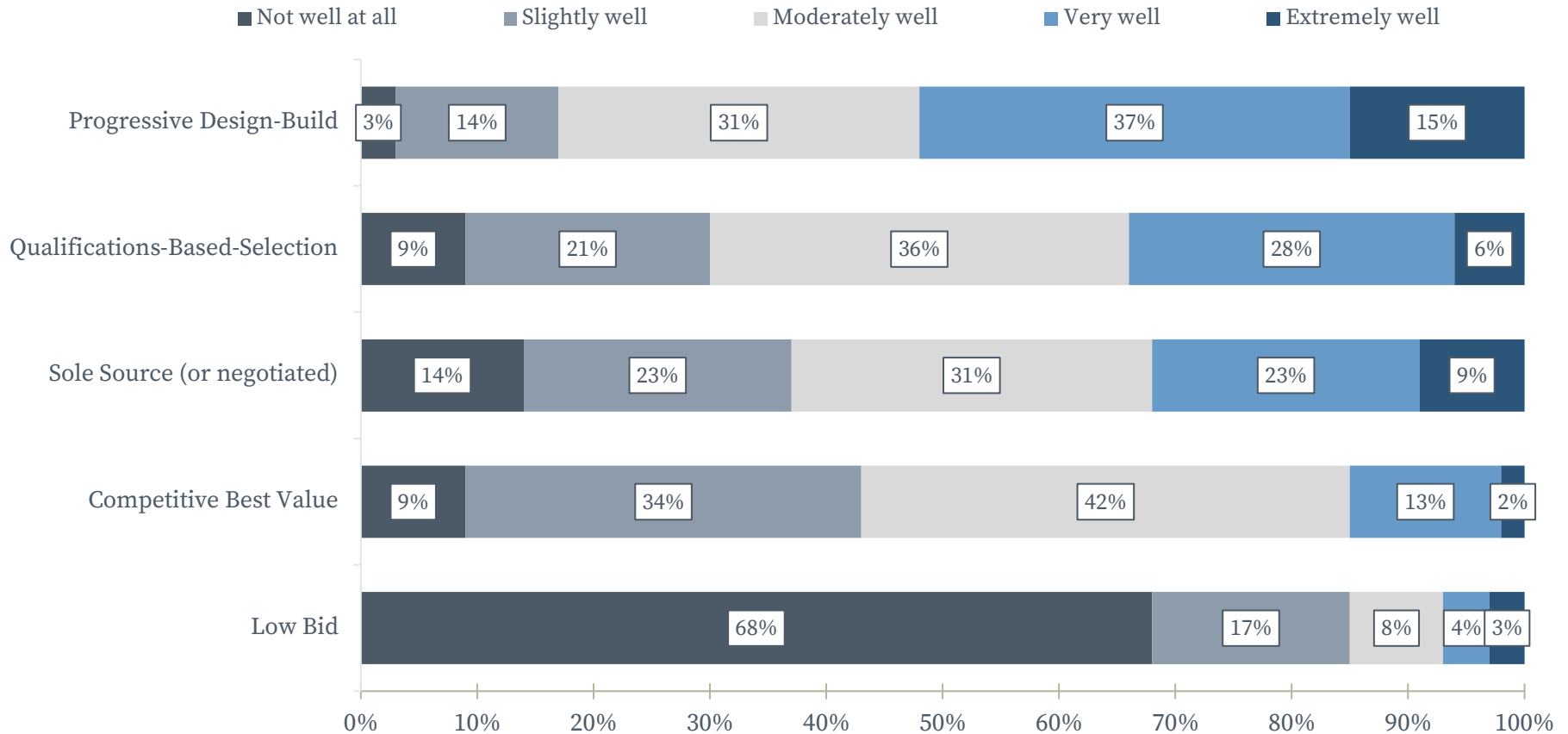


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**Progressive design-build was voted as the best procurement method to manage costs, while low bid is perceived to be the worst approach to control costs.**

**How do the following procurement approaches address the ability to manage cost certainty in a volatile market environment?**

Source(s): FMI (Average Response)



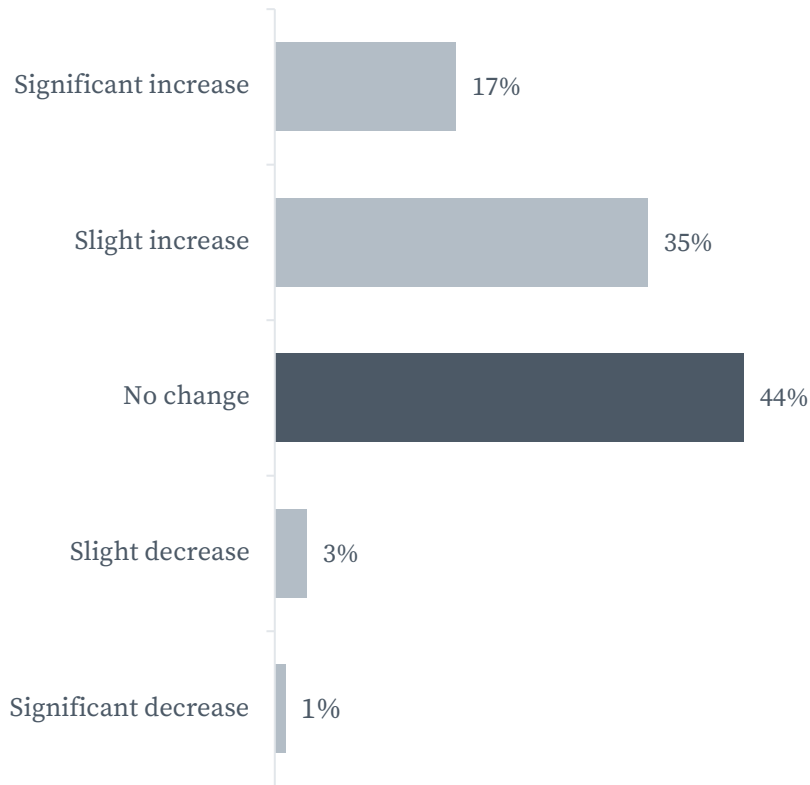
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The majority of respondents indicated none to slight positive change for design-build in reaction to recent legislative infrastructure bills.

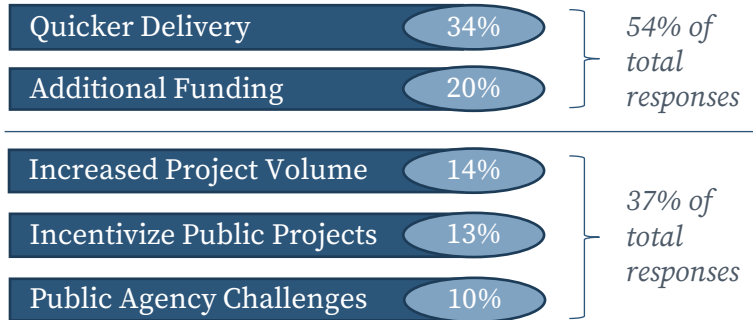
## How will the utilization of design-build change as a result of the Bipartisan Infrastructure Law / IIJA / Inflation Reduction Act?

Source(s): FMI (Average Response)

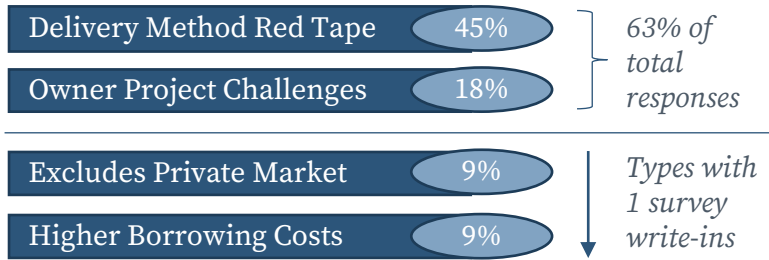
Over half of those surveyed believe design-build use will increase thanks to new infrastructure legislation. Many cited projects will now have the funding support to accelerate a higher volume of projects in owner pipelines. 44% don't think utilization will change at all and a small percentage of stakeholders anticipate a decline of design-build use. The majority of those with negative outlooks believe ministerial red tape from the legislation will impede quicker design-build adoption.



### Why do you think design-build will increase as a result of the Bipartisan Infrastructure Law/IIJA/Inflation Reduction Act??



### Why do you think design-build will decrease as a result of the Bipartisan Infrastructure Law/IIJA/Inflation Reduction Act?

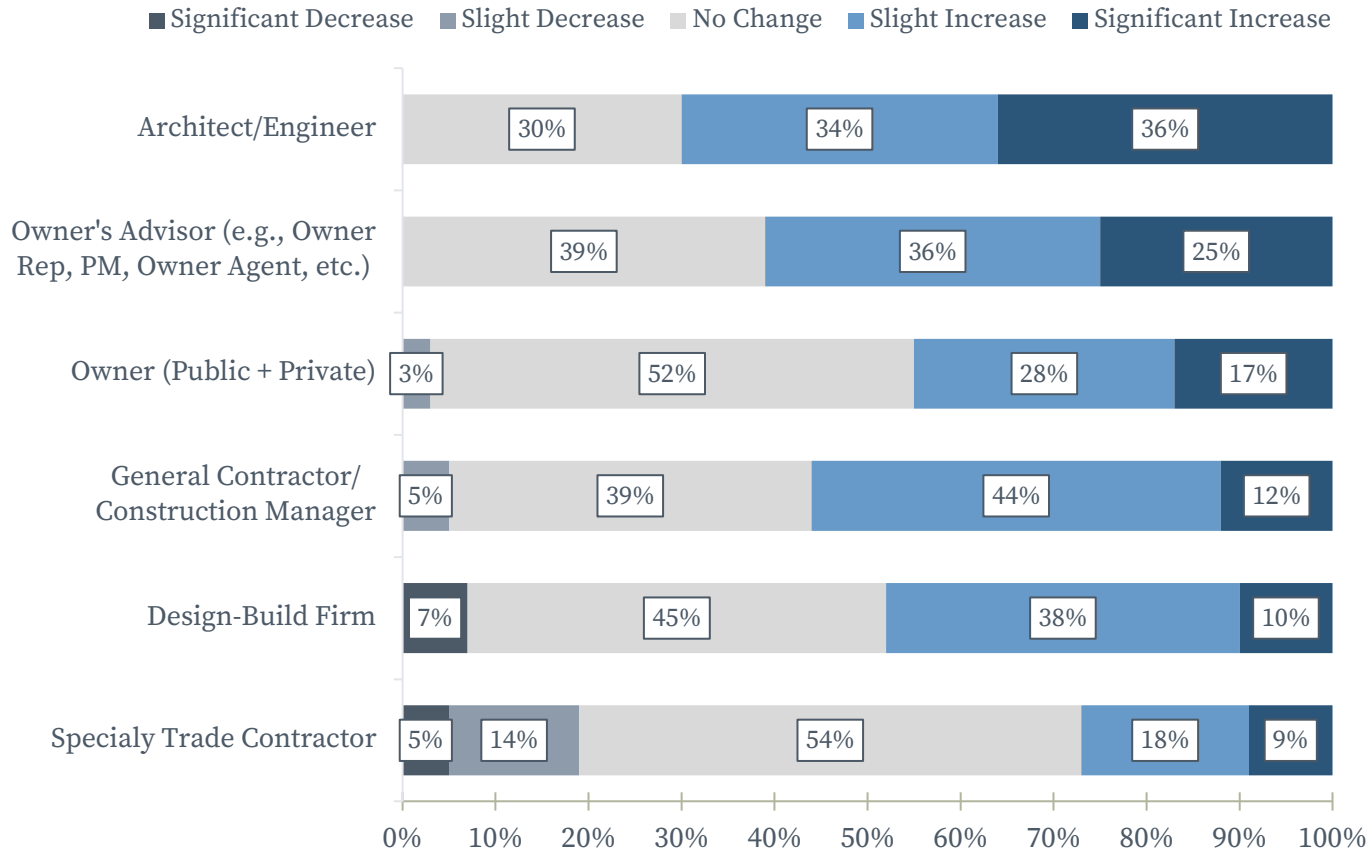


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## Stakeholders are unaligned with how design-build use will react to recent infrastructure legislation.

### How will the utilization of design-build change as a result of the Bipartisan Infrastructure Law / IIJA / Inflation Reduction Act?

Source(s): FMI (Average Response)



Stakeholder sentiment towards infrastructure legislation impacting design-build varies across the board. Over a quarter of Architects and engineers believe design-build will significantly increase due to recent legislation. GCs and CMs have the highest cumulative positive attitude towards design-build. About two out of three GCs/CMs voted design-build would increase thanks to infrastructure legislation. Owners are split over the future of design-build use, but trend positive.

Design-build firms and specialty trade contractors believe the opposite and there will be a decrease in design-build thanks to recent legislation. Over 75% of design-build firms believe use will shrink and 67% of specialty trade contractors anticipate use to contract.



**Consulting**

**Definitions**



## Definitions of Construction

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### Construction Put in Place (CPiP) includes the following:

1. New buildings and structures.
2. Additions, alterations, conversions, expansions, reconstruction, renovations, rehabilitations and major replacements (such as the complete replacement of a roof or heating system).
3. Mechanical and electrical installations such as plumbing, heating, electrical work, elevators, escalators, central air-conditioning and other similar building services.
4. Site preparation and outside construction of fixed structures or facilities such as sidewalks, highways and streets, parking lots, utility connections, outdoor lighting, railroad tracks, airfields, piers, wharves and docks, telephone lines, radio and television towers, water supply lines, sewers, water and signal towers, electric light and power distribution and transmission lines, petroleum and gas pipelines, and similar facilities that are built into or fixed to the land.
5. Installation of the following types of equipment: boilers, overhead hoists and cranes and blast furnaces.
6. Fixed, largely site-fabricated equipment not housed in a building, primarily for petroleum refineries and chemical plants, but also including storage tanks, refrigeration systems, etc.
7. Cost and installation of construction materials placed inside a building and used to support production machinery; for example, concrete platforms, overhead steel girders, and pipes to carry paint, etc. from storage tanks.

### The following are excluded from construction:

1. Maintenance and repairs to existing structures or service facilities.
2. Cost and installation of production machinery and equipment items not specifically covered above, such as heavy industrial machinery, printing presses, stamping machines, bottling machines, and packaging machines; special purpose equipment designed to prepare the structure for a specific use, such as steam tables in restaurants, pews in churches, lockers in school buildings, beds or X-ray machines in hospitals, and display cases and shelving in stores.
3. Drilling of gas and oil wells, including construction of offshore drilling platforms; digging and shoring of mines (construction of buildings at mine sites is included); work that is an integral part of farming operations such as plowing and planting of crops.
4. Land acquisition.

### The “value of construction put in place” is a measure of the value of construction installed or erected at the site during a given period, including:

1. Cost of materials installed or erected.
2. Cost of labor (both by contractors and force account) and a proportionate share of the cost of construction equipment rental.
3. Contractor’s profit.
4. Cost of architectural and engineering work.
5. Miscellaneous overhead and office costs chargeable to the project on the owner’s books.
6. Interest and taxes paid during construction (except for state and locally owned projects).

**Compound Annual Growth Rate (CAGR):** Average annual growth rate over multiple time periods.

# DBIA | Mid-Cycle Update Report

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## Definitions of Construction

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### ***Lodging***

Includes hotels, motels, resort lodging, tourist courts and cabins and similar facilities.

### ***Office***

In addition to the types of offices listed below, it also includes motion picture, television and radio offices. Office buildings at manufacturing sites are classified as *manufacturing*; however, an office building owned by a manufacturing company and not located at a manufacturing site is classified as *office*.

**General** - Includes administration buildings, computer centers, office buildings and professional buildings. State and local and federal also includes city halls, borough halls, municipal buildings, courthouses and state capitol buildings.

**Financial** - Includes banks, financial institutions, building and loans, saving and loans and credit unions.

### ***Commercial***

Includes buildings and structures used by the retail, wholesale and selected service industries.

**Automotive** - Sales - Includes auto dealerships, motorcycle dealerships, auto showrooms, and truck dealerships. Service/Parts - Includes auto service centers, auto parts centers, auto repair centers, tire service centers, car washes, car rental centers, gas stations and emissions testing centers.

**Parking** - Includes commercial parking lots and garages.

**Food/Beverage** - Food - Includes supermarkets, bakeries, dairies, markets, convenience stores and delicatessens. Dining/Drinking - Includes liquor stores, bars, nightclubs, cafés, diners, restaurants, cafeterias, taverns, inns (eat and drink only), and bistros. Fast Food - Includes drive-in restaurants and fast food restaurants.

**Multi Retail** - In addition to the types of multi-retail establishments listed below, it also includes warehouse-type retail stores. General Merchandise - Includes department stores and variety stores. Shopping Center - Includes shopping centers, shopping plazas and town centers. Shopping Mall - Includes shopping malls.

**Other commercial** - In addition to the types of stores listed below, it also includes beauty salons, nail shops, crematories, funeral homes, animal shelters, kennels, veterinary clinics, florists, nurseries, pawnshops, photo shops, dance schools, dry cleaners, laundromats and post offices. Drug store - Includes drug stores and pharmacies. Building Supply Store - Includes hardware stores and lumberyards. Other stores - Includes clothing stores, jewelry stores, salesrooms (non-auto), furniture stores, office supply stores, storerooms and electronics stores.

General Commercial - Includes commercial warehouses, storage warehouses and distribution buildings. Mini-storage - Includes mini-storage centers and self-storage centers.

**Farm** - Includes buildings and structures such as barns, storage houses, smokehouses and fences; land improvements such as land leveling, terracing, tile drainage; and the construction of ponds, roads and lanes on establishments having annual agricultural sales of \$1,000 or more.

# DBIA | Mid-Cycle Update Report

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## Definitions of Construction

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### ***Health Care***

Hospital - Includes hospitals, mental hospitals, infirmaries and infrastructure.

Medical building - Includes clinics, medical offices, medical labs, doctor and dentist offices, outpatient clinics, and research labs (nonmanufacturing, noneducational, or non-hospital).

Special care - Includes nursing homes, hospices, orphan homes, sanatoriums, drug clinics, rehabilitation centers, rest homes and adult day-care centers.

### ***Educational***

In addition to the types of educational facilities listed below, it also includes nursing schools, cosmetology and beauty schools, trade schools, military training facilities, schools for the handicapped and modeling schools.

Preschool - Includes childcare and day-care centers, nurseries and preschools.

Primary/Secondary - In addition to the types of primary and secondary schools listed below, it also includes academies, parochial schools and vocational schools.

Elementary - Includes elementary schools. Middle/Junior High - Includes middle and junior high schools.

High - Includes high schools.

Higher Education - In addition to the types of higher education facilities listed below, it also includes health centers and clinics located at colleges (including junior and community colleges) and universities.

Instructional - Includes instructional buildings and laboratories.

Parking - Includes parking lots and garages.

Administration - Includes administration buildings.

Dormitory - Includes dormitories, living/learning centers and residence halls.

Library - Includes libraries (school).

Student Union/Cafeteria - Includes student union buildings and cafeterias.

Sports/Recreation - Includes gymnasiums and athletic field houses, etc.

Infrastructure - Includes power plants, water supply, sewage and other infrastructure.

Other Educational - Galleries/museums and libraries/archives.

### ***Public Safety***

Correctional - Detention - Includes cell blocks, detention centers, jails, penitentiaries and prisons. Police/Sheriff - Includes police stations and sheriffs' offices.

Other Public Safety - In addition to the types of facilities listed below, it also includes armories and military structures that could not be assigned to a specific type of construction. Fire/Rescue - Includes fire stations, rescue squads, dispatch and emergency centers.

### ***Transportation***

#### ***Air:***

In addition to the types of facilities listed below, it also includes pavement and lighting, hangars, air freight terminals, space facilities, air traffic towers, aircraft storage and maintenance buildings.

Passenger terminal - Includes air passenger terminals.

Runway - Includes airport runway pavement and lighting.

#### ***Land:***

In addition to the types of facilities listed below, it also includes maintenance facilities and freight terminals (bus, railroad or truck).

Passenger Terminal - Includes bus and railroad passenger terminals.

Mass Transit - Includes light rail, monorail, streetcar, and subway facilities.

Railroad - includes railroad track and bridges.

#### ***Water:***

Dock/Marina - Includes docks, piers, wharves and marinas.

Dry dock/marine terminal - Includes dry docks, boatels and maritime freight terminals.

# DBIA | Mid-Cycle Update Report

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## Definitions of Construction

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### ***Amusement and Recreation***

In addition to the types of facilities listed below, it also includes racetracks, equestrian centers, riding academies, bowling alleys, rifle ranges, casinos, pool halls and driving ranges.

Theme/Amusement Park - Includes amusement buildings or rides, theme parks and arcades.

Sports - Includes these structures not located at schools or colleges: gymnasiums and athletic field houses, arenas, coliseums and stadiums, outdoor courts or fields, racquetball courts, rinks, tennis courts and swimming pools.

Fitness - Includes fitness centers, health or athletic clubs, YMCAs, YWCAs, cabanas, saunas and spas.

Performance/Meeting Center - In addition to the types of facilities listed below, it also includes civic centers, concert halls, opera houses, theaters for the performing arts, amphitheaters, pavilions and auditoriums.

Park/Camp - Includes parks, seasonal camps and tourist camps.

Movie Theater/Studio - Includes movie theaters, drive-ins and movie, radio and television studios.

### ***Manufacturing***

Food/Beverage/Tobacco - Food industries transform livestock and agricultural products into products for intermediate or final consumption. These products are typically sold to wholesalers or retailers for distribution to consumers.

- Beverage industries include manufacturing of nonalcoholic and alcoholic beverages. Ice manufacturing is included with nonalcoholic beverage manufacturing.
- Tobacco industries include the re-drying and stemming of tobacco and the manufacturing of tobacco products, such as cigarettes and cigars.

Textile/Apparel/Leather and Allied - Textile industries transform a basic fiber (natural or synthetic) into a product, such as yarn or fabric.

- Apparel industries purchase fabric to cut and sew to make a garment.
- Leather and allied industries transform hides into leather products. Also included are leather substitutes, such as rubber (*example: rubber footwear*) and plastic (*example: plastic purses or wallets*).

Wood - Manufacture wood products, such as lumber, plywood, veneers, wood containers, wood flooring, wood trusses, manufactured homes (i.e., mobile home), and prefabricated wood buildings.

Paper - Manufacture pulp, paper, or converted paper products.

Print/Publishing - Print products, such as newspapers, books, periodicals, business forms, greeting cards, and other materials, and perform support activities, such as bookbinding, platemaking services and data imaging.

Petroleum/Coal - Transform crude petroleum and coal into usable products.

Chemical - Transform organic and inorganic raw materials by a chemical process and form products.

Plastic/Rubber - Make goods by processing plastics materials and raw rubber.

Nonmetallic Mineral - Transform mined or quarried nonmetallic minerals, such as sand, gravel, stone, clay, and refractory materials, into products for intermediate or final consumption.

# DBIA | Mid-Cycle Update Report

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## Definitions of Construction

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### ***Manufacturing (Continued)***

**Primary Metal** - Smelt and/or refine ferrous and nonferrous metals from ore, pig or scrap, using electrometallurgical and other process metallurgical techniques. The output of smelting and refining, usually in ingot form, is used in rolling, drawing, and extruding operations to make sheet, strip, bar, rod, or wire, and in molten form to make castings and other basic metal products.

**Fabricated Metal** - Transform metal into intermediate or end products, other than machinery, computers and electronics, and metal furniture or treating metals and metal formed products fabricated elsewhere.

**Machinery** - Create end products that apply mechanical force, for example, the application of gears and levers, to perform work.

**Computer/Electronic/Electrical** - Manufacture computers, computer peripherals, communications equipment, and similar electronic products and the components for such products.

**Electrical** - Manufacture products that generate, distribute and use electrical power. Included are manufacturers of electric lighting equipment, household appliances, and other electrical equipment and components.

**Transportation Equipment** - Produce equipment for transporting people and goods.

**Furniture** - Make furniture and related articles, such as mattresses, window blinds, cabinets and fixtures.

**Miscellaneous** - Make a wide range of products that are not produced in the specified manufacturing categories. Examples are medical equipment and supplies, jewelry, sporting goods, toys and office supplies.

### **Water/wastewater**

#### **Sewage/dry waste**

In addition to the types of facilities listed below, it also includes resource recovery and recycling centers, and pond sewage systems.

**Plant** - includes solid waste disposals (incinerator or burial), sewage treatment plants, and sewage disposal plants.

**Line/pump station** - includes sanitary sewers, sewage pipeline, interceptors and lift/pump stations.

#### **Waste water**

Plant - includes waste water disposal plants.

Line/drain - includes water collection systems (nonpotable water) and storm drains.

#### **Water Supply**

Plant - Includes filtration, treatment, water supply, and water softening plants.

Well - Includes water wells.

Line - Includes culverts (water supply), water transmission pipelines, tunnels and water lines.

Pump station - Includes gatehouses and lift/pump stations.

Reservoir - Includes potable water supply reservoirs.

Tank/tower - Includes water storage tanks and towers.

### **Highway and Street**

**Pavement** - Includes highways, roads, streets, culverts, gutters and sidewalks.

**Lighting** - Includes traffic lights, signals and highway lighting systems.

**Retaining wall** - Includes retaining walls and fences.

**Tunnel** - Includes highway tunnels (vehicular or pedestrian).

**Bridge** - Includes bridges and overhead crossings (vehicular or pedestrian).

**Toll/weigh** - Includes toll facilities, weigh and inspection stations.

Federal includes border-crossing stations.

**Maintenance building** - Includes maintenance and storage buildings and salt domes.

**Rest facility** - Includes rest facilities, travel centers, median improvements, beautification projects and welcome centers.

# DBIA | Mid-Cycle Update Report

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FMI is a leading consulting and investment banking firm dedicated exclusively to the built environment. We serve as the industry's trusted advisor, providing current market insights, deep industry research and key relationships that deliver tangible results for our clients.

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