Design Build Overview
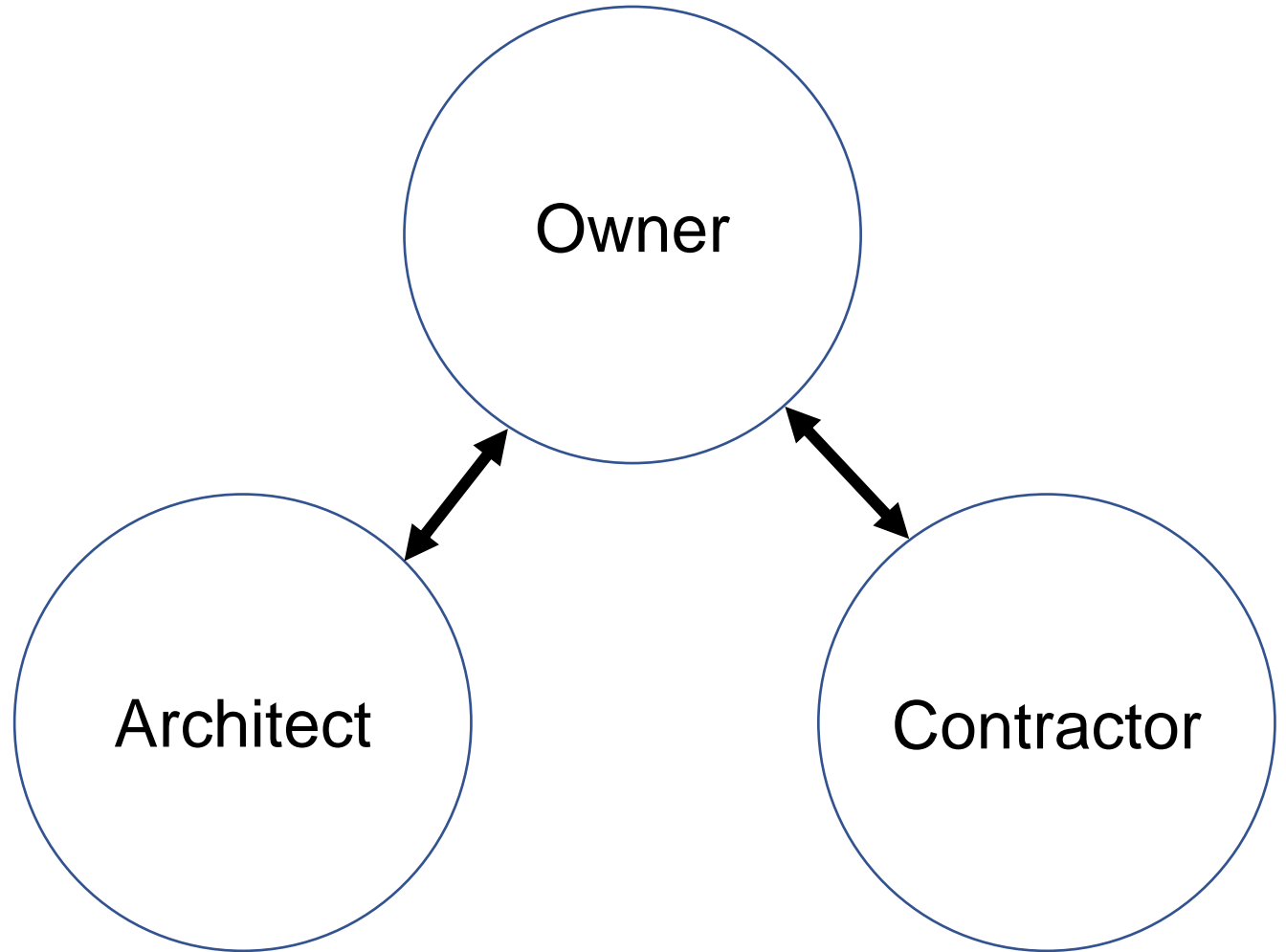
1- State of Design Build in the U.S.

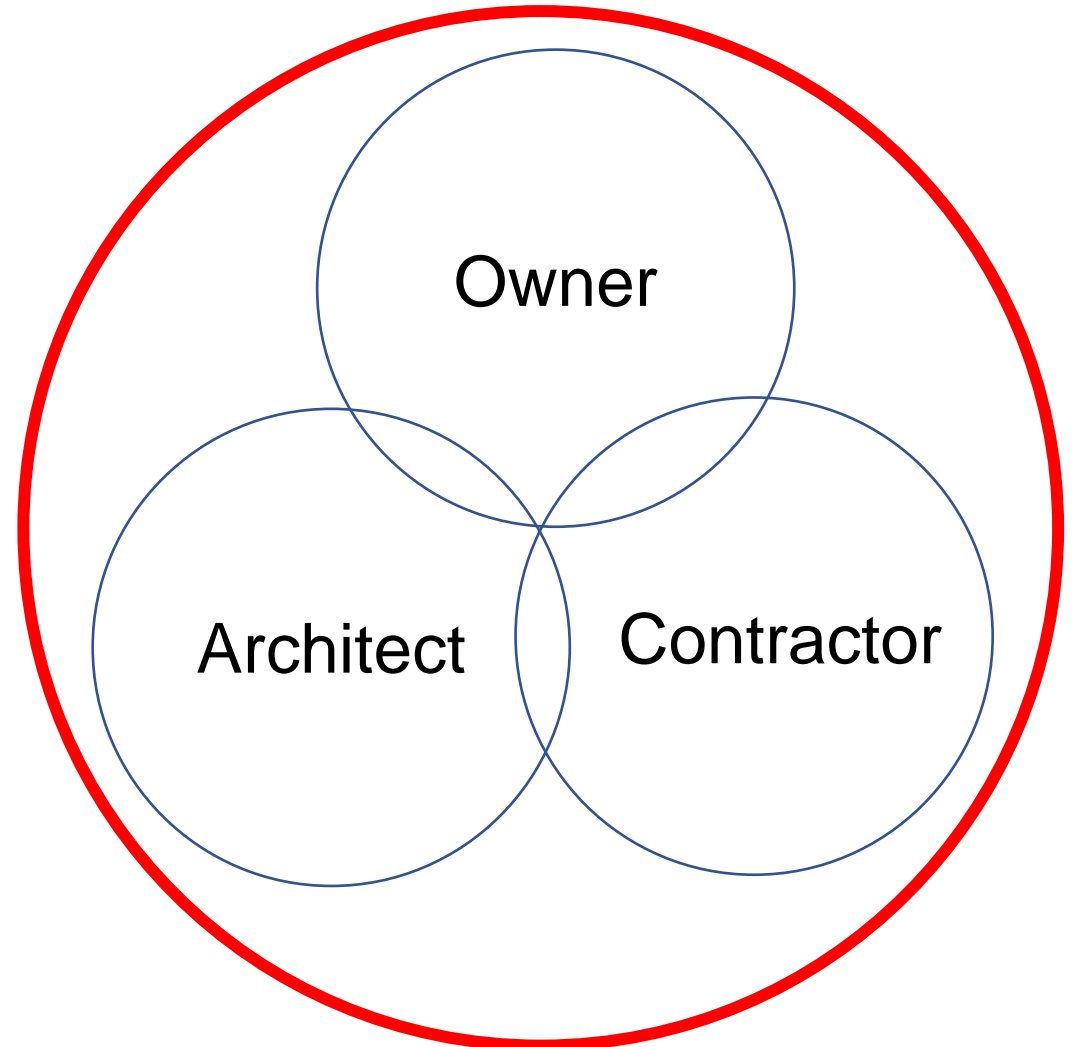2- DBIA

3- Beck

Design Build Overview

Design-Bid-Build & CM at Risk
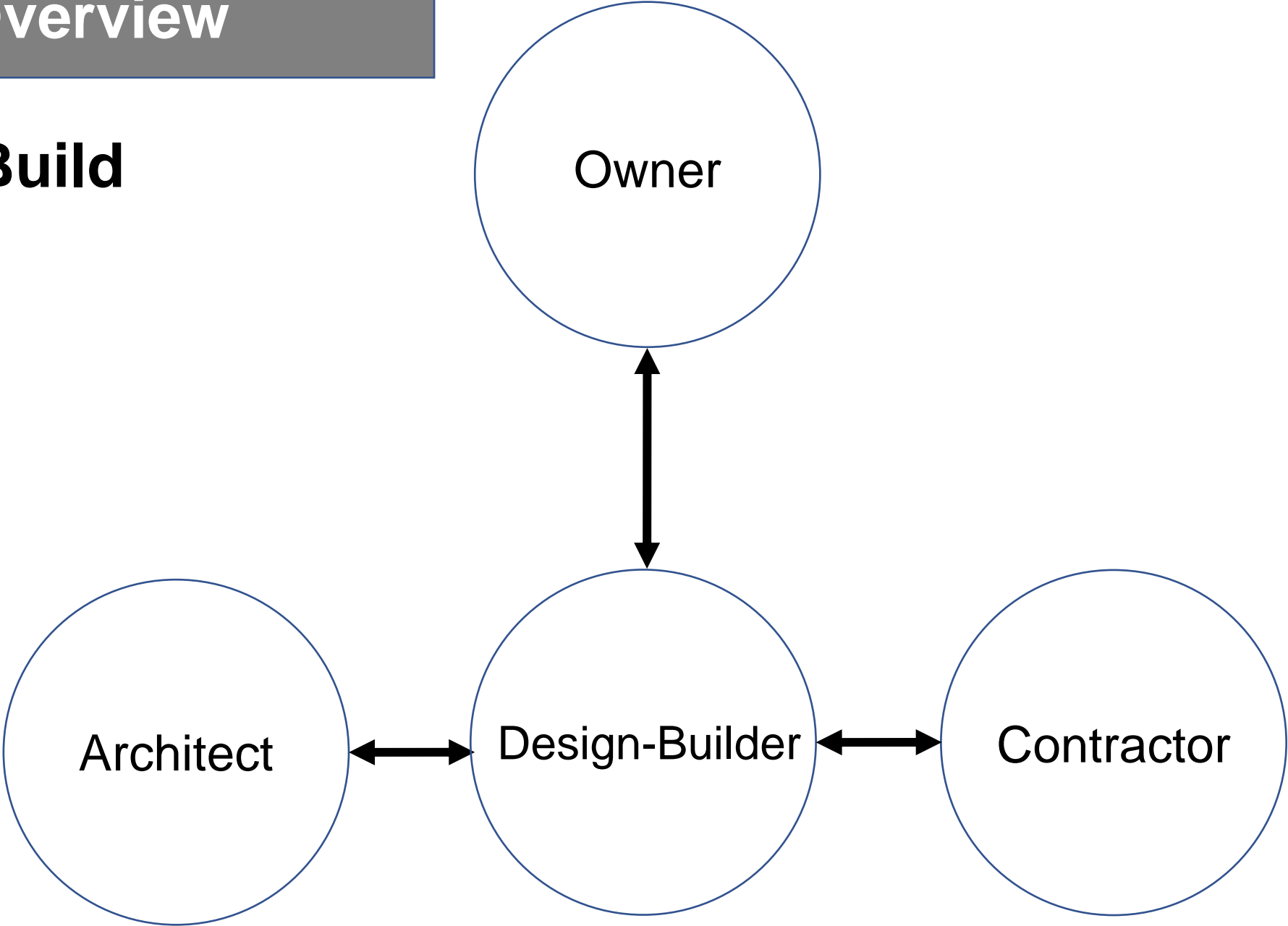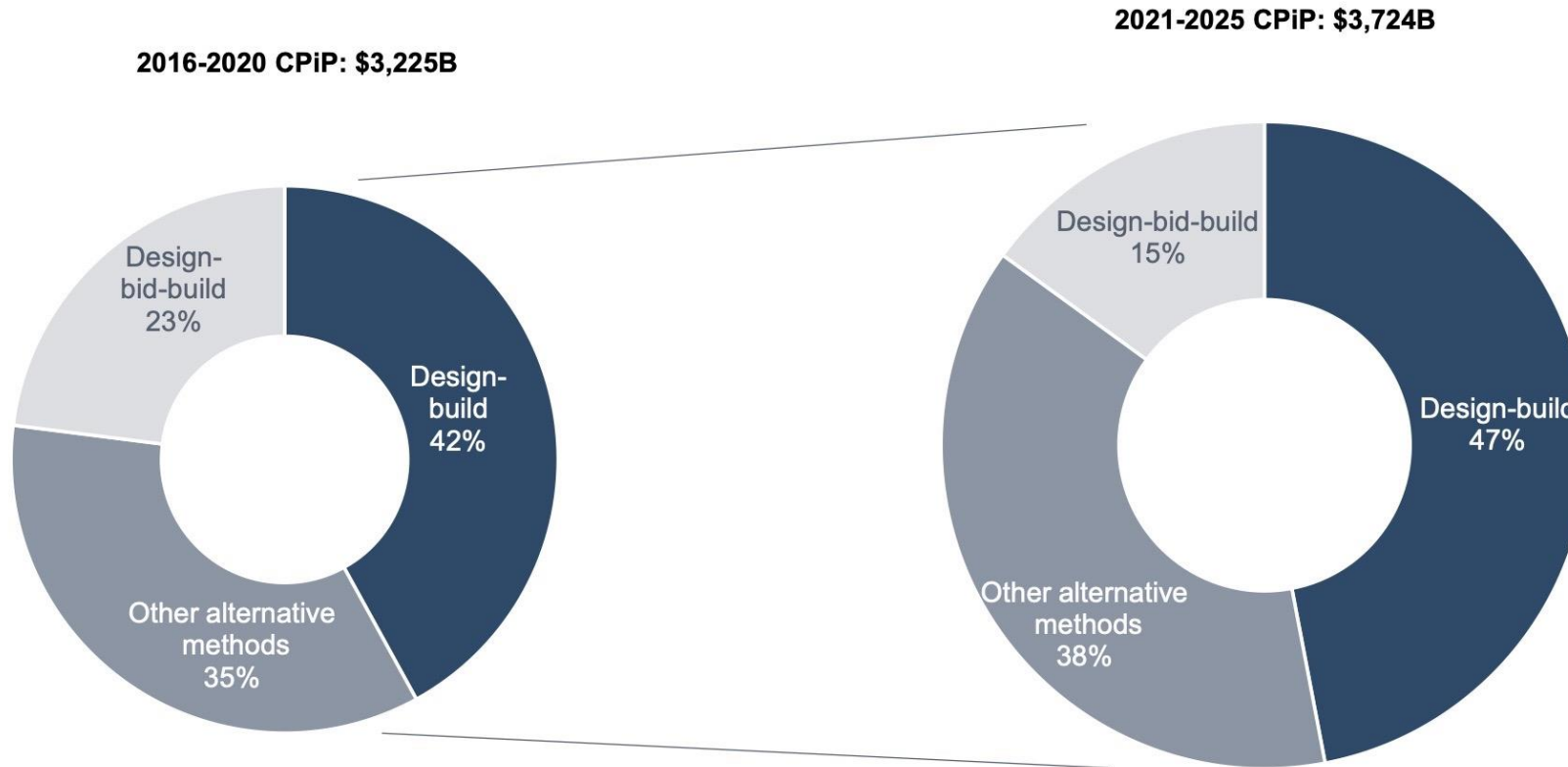
Integrated Project Delivery

Why Design Build?

- Spearin Doctrine of 1905
  - Owner is responsible for providing the contractor with complete and accurate information

- Standard of care
  - Architects are not perfect, they are only required to produce drawings of the same quality as another architect practicing on a similar project in the same region

Design-build is anticipated to continue to gain share over the forecast period and represent as much as 47% of spending in 2025.

Distribution of delivery method utilization
Source(s): FMI analysis of multiple sources

2016-2020 CPiP: $3,225B

2021-2025 CPiP: $3,724B

Design-bid-build 23%

Design-build 42%

Other alternative methods 35%

Design-bid-build 15%

Design-build 47%

Other alternative methods 38%

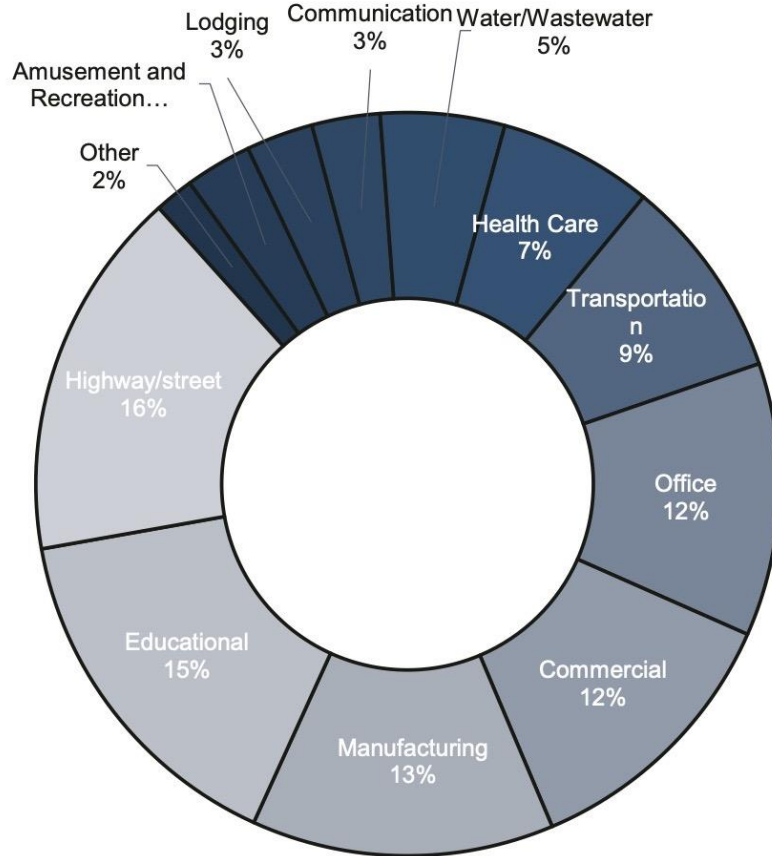*Other alternative methods includes CM/GC, CMAR, EPC and IPD
**Percentages are based on estimated utilization across construction spending.

Highway/street, educational and manufacturing are anticipated to hold the largest share of design-build spending through 2025.

Distribution of forecast spending by segment
Combined CPiP spending, 2021-2025
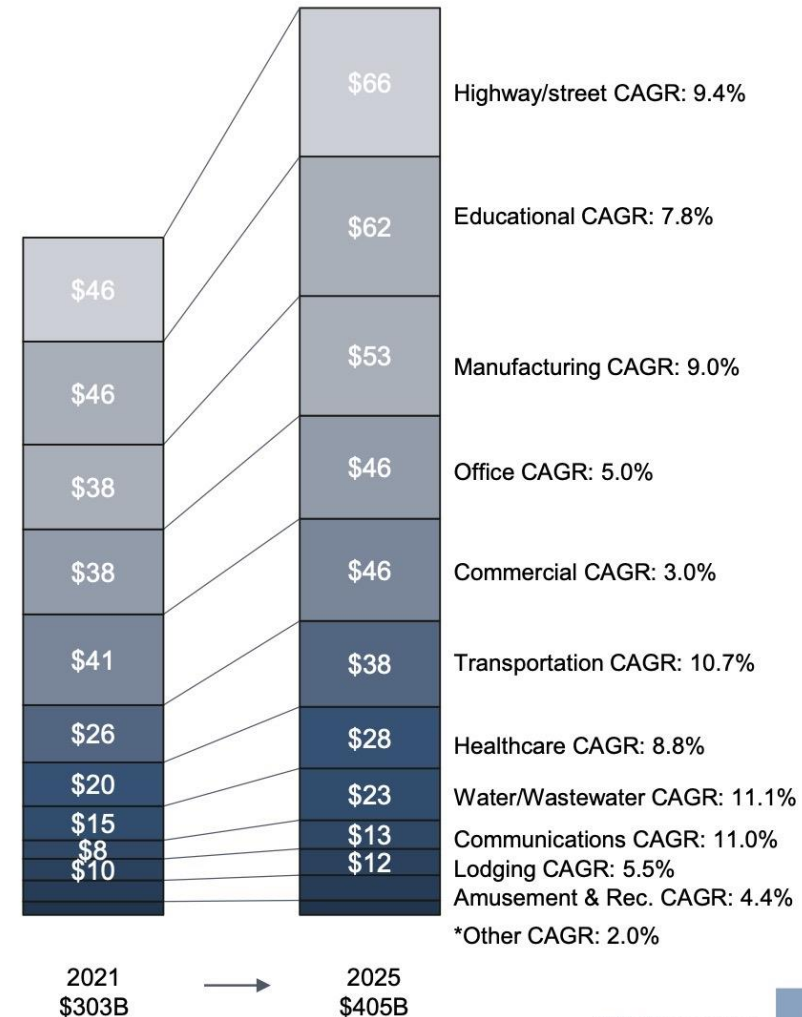Source(s): FMI analysis of multiple sources

Lodging 3%
Communication 3%
Water/Wastewater 5%
Amusement and Recreation…
Other 2%
Health Care 7%
Transportation 9%
Highway/street 16%
Office 12%
Educational 15%
Commercial 12%
Manufacturing 13%

Total spend 2021-2025: $1,732B

*Other includes: Public safety and religious

FMI Consulting

Distribution of market
CPiP spending, 2021, 2025
Source(s): FMI analysis of multiple sources

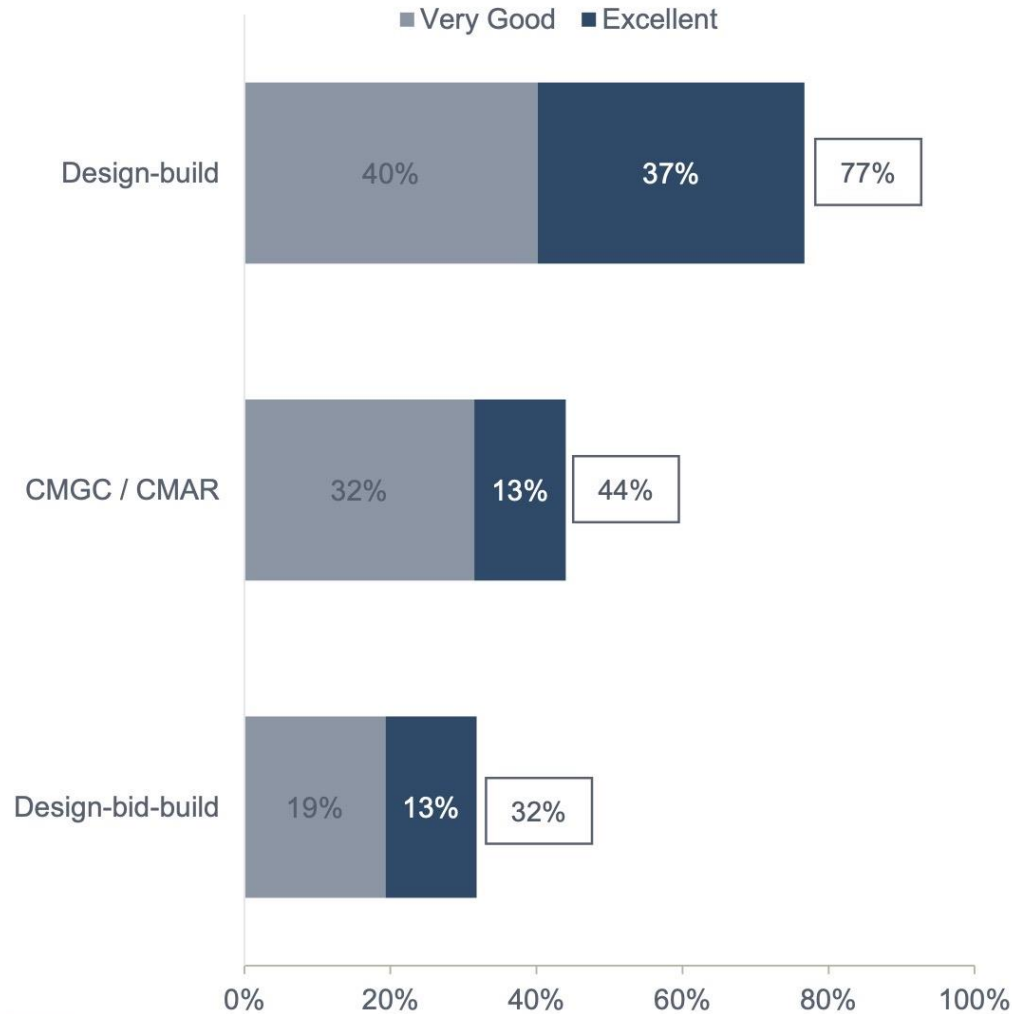| 2021	2025	
$46	$66	Highway/street CAGR: 9.4%
$46	$62	Educational CAGR: 7.8%
$38	$53	Manufacturing CAGR: 9.0%
$38	$46	Office CAGR: 5.0%
$41	$46	Commercial CAGR: 3.0%
$26	$38	Transportation CAGR: 10.7%
$20	$28	Healthcare CAGR: 8.8%
$15	$23	Water/Wastewater CAGR: 11.1%
$8	$13	Communications CAGR: 11.0%
$10	$12	Lodging CAGR: 5.5%
		Amusement & Rec. CAGR: 4.4%
		*Other CAGR: 2.0%

2021
$303B

2025
$405B

14

Over 75% of survey respondents have had a 'very good' or 'excellent' experience on their design-build projects.

Delivery method experience
Percentage of respondents that selected very good or excellent
Source(s): FMI

■ Very Good ■ Excellent

Design-build
40%   37%   77%

CMGC / CMAR
32%   13%   44%

Design-bid-build
19%   13%   32%

0%   20%   40%   60%   80%   100%

The ability to select the best-fit team with the capabilities and expertise that best align with the project was noted as a key driver of positive experiences with design-build. Additionally, the ability of a team to get in early, identify potential innovations and work with the owner to articulate their definition of project success enables a greater likelihood that the team will have an excellent experience.

"Concerning design-build, clearly there are scheduling benefits and there are cost benefits. Additionally, I think we achieve greater efficiencies and if we can do things more efficiently, we can do things better. Overall, the collaborative approach certainly has its benefits both cost and scheduling."
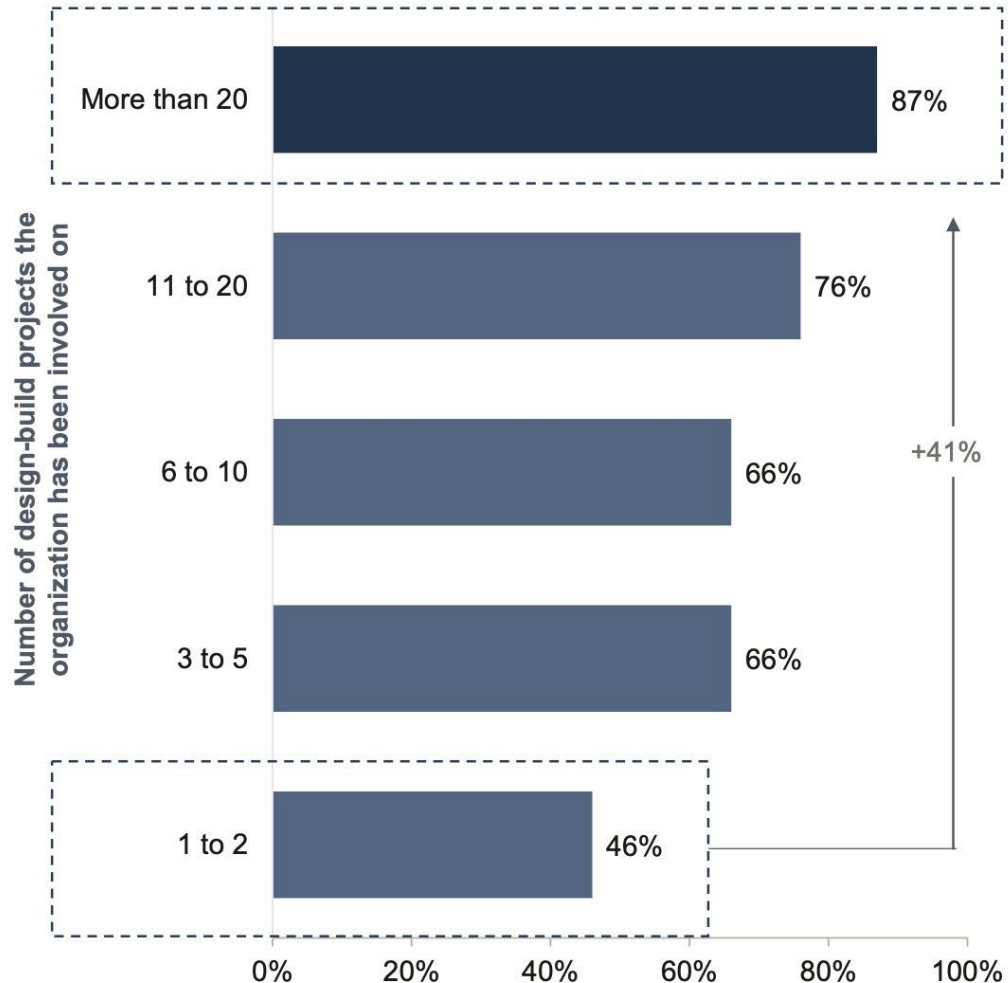
"The opportunity for innovation is the greatest in design-build projects. The ability to solve complex technical challenges and gain the innovation from the team are the greatest draws for me."

Positive experiences with design-build significantly increased as organizations gain experience and understanding of how to effectively deliver these projects.

Number of projects and experience with design-build
Percentage of respondents that selected 'very good' or 'excellent'
Source(s): FMI

Number of design-build projects the organization has been involved on

Category	Percentage
More than 20	87%
11 to 20	76%
6 to 10	66%
3 to 5	66%
1 to 2	46%

+41%

0% 20% 40% 60% 80% 100%

Positive experiences with design-build were indicated to increase as organizations gain a deeper understanding of the benefits provided by design-build and how to effectively utilize design-build across a wider range of projects. Understanding how design-build best fits with an owner's program/projects is a key factor in increasing the likelihood of a positive experience.

The education process is highly important in achieving a positive experience with design-build. Gaining experience and knowledge of the process takes commitment and alignment on what is needed, and the resources required to achieve success.

When less favorable experiences with design-build were noted, the following characteristics were often identified as contributing factors:

- Owners that perceive design-build as a vehicle to transfer all the risk to the design-build team.
- Underestimating the time and resource commitment it will take from the owner side.
- Lack of communication and collaboration across the project team.
- Lack of a dedicated design-build team leader.

DBIA

DBIA: Founded in 1993 with three goals:

-Legislation: making design build legal

-Setting standards and best practices

-Educating the entire industry: owners, contractors, architects, and engineers.

DESIGN-BUILD
DONE RIGHT®
Design-Build Best Practices

UNIVERSALLY APPLICABLE

- any project type
- any sector
- any size
- any variation of design-build delivery

Design Build: Two Step, Best Value

- Process
    - Owner develops a detailed building program for the project
    - Owner selects a shortlist of 3 or more teams based on qualifications
    - Teams generate a design with a fixed cost
    - The owner selects the best combination of design and cost

- Positives:
    - Owner begins the project with a design and a firm fixed cost
    - It is legal for use by most government agencies

- Negatives
    - Very expensive pursuit costs
    - Allows little owner involvement in the design process
    - Requires a great deal of upfront work to tightly define the project

Design Build: Progressive

- Process
    - Owner selects a design build team based on qualifications and fees
    - Owner and team develop the design working together
    - When the design 'Progresses' sufficiently the design builder provides a GMP
- Positives:
    - Owner participates in the development of the design
    - Architect has direct engagement with the owner during design
- Negatives
    - Owner selects team without a competitive price
    - Is not legal for many government entities

Remaining Challenges

- Resistance from architects, particularly smaller firms
- Resistance from owner's representatives
- Resistance from commercial developers

Beck

Beck

- Established in 1912
- Family owned till 1994
- $1.3B volume, 200 architects, 8 offices
- Merged with Urban Architecture in 1999
- Developing software since 1996: D Profiler Estimator

Beck

Why merge with an architecture firm?

- Technology
- Financial motivation
- **Revolutionize the industry…change our future**

Beck

Results of the merger:

- Positive cultural alignment, very low turnover
- Challenges with professional alignment
- Significant pushback from owners, architects, and contractors

Beck

People and Culture are the key ingredient for success

- The wrong individuals can defeat the best strategy

- Great individuals working together = success

- You need Competence+Collaboration