



# 2020 Building Products Market Update





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# It's Time for Building Product and Material Manufacturers to Drive the Digital Age

*Building product and material manufacturers have an opportunity to be leaders in market-facing technology adoption and create stickiness and loyalty with their customers. Here's why now is the time to make the move.*

**By Paul Giovannoni and Russ Young**

Digital transformation isn't easy for any industry. Even tech-savvy organizations struggle with issues like employee pushback, age-old cultural norms, the cost of integrating new technologies, and a lack of digital expertise needed to lead these initiatives. Despite the challenges, the push to transform organizations, processes and customer experiences through the use of technology continues. That means organizations can either get onboard or risk being left behind. This is especially true right now in the construction industry.

This presents opportunities and challenges for building product and material manufacturers, as the current state of digital transformation varies widely at all steps of the construction value chain they serve. For example, some contractors, architects and engineers are well to the right on the adoption curve (e.g., DPR, Fortis, McCarthy and Kattera), while the vast majority of the market lies somewhere in the middle. Some stragglers are lagging behind the pack and hanging far to the left on the adoption curve.

In this article, we explore the key issues that keep manufacturers from developing and adopting technology, explain keys to a successful technology strategy, and show why now is the time for manufacturers to begin heading down the path to successful digital transformation and engagement.

## From Laggard to Leader

To no one's surprise, the construction industry is a "laggard" in terms of its adoption and promotion of technology. And it's not only financial investment and organizational commitment to technology that is lacking; receptiveness to technology as a whole is also limiting adoption. Stuck in their old ways of doing things, many companies are reluctant to change processes, train their people, and pioneer more innovative approaches in construction. As a result, even the companies that are leading the pack with digital transformation can't carry the whole industry.

For decades, manufacturers have been dealing with secondhand information in a game not too different from the “telephone” game that children play. Contractors talked to distributors or sales reps, who then conveyed their interpretation of the information to the manufacturers. Unsure of what their end customer really wanted—or what their key pain points were—manufacturers were left to their own devices and a lot of guesswork to figure out the answers to those questions.

This long-standing system creates many challenges for manufacturers, one of which being how they develop and implement market-facing technology to engage their customers. Nearly all our manufacturing clients know they must act and have a technology strategy, but most don’t know what it should be because they don’t know where their customers are along the technology adoption spectrum or how to add value through technology. Oftentimes, when manufacturers do get the direct interface to speak to contractors, the contractors cannot articulate what they want regarding technology. This uncertainty in part creates a hesitation to act or uncertainty on what to actually do. This leaves the door of opportunity open wide for the forward-looking manufacturers willing to take the leap through effectively harnessing technology in order to strengthen customer relationships and ultimately be the preferred supplier.



## Stickier Customer Relationships Wanted

The manufacturer that moves too slowly could get left behind as its competition becomes easier to work with, provides additional services, creates “stickier” customer relationships or simply builds a better mousetrap through the use of technology. It’s the classic case study of Borders versus Amazon or Blockbuster versus Netflix; we’re now at that tipping point in the construction industry.

The good news is that we’re beginning to see a glimmer of hope as more contractors realize the value of technology and even the laggards get onboard with digital transformation in 2020. Here are seven reasons why this is happening:

1. **The labor shortage isn’t letting up.** With the national unemployment rate hovering at 3.5%—and much lower than that in some regions—contractors need tools that help them work smarter, better and faster without the need for additional human labor.
2. **Mobile operations are more efficient and millennial-friendly.** Field expectations around mobile technology (versus paper process) continue to grow as mobile becomes instrumental in how we all live, pay bills, buy movie tickets, communicate, purchase and consume news. For the workforce of tomorrow, technology is a must-have, not a nice-to-have.
3. **Ownership succession.** A new generation of leaders who have yet to lead through or experience a recession are bolder than their counterparts and less risk-averse.
4. **Owners demand it.** Project owners are becoming more sophisticated and expect the same from the contractors they work with and the entire supply chain.
5. **Nontraditional participants are entering the market.** Companies like Amazon Business are knocking on every door in the B2B sector right now, construction included.
6. **Money is flowing into tech for the industry.** This is helping organizations overcome the “we can’t afford to invest in technology” argument and pointing a spotlight on the opportunity available for tech-enabled value creation.
7. **A downturn could be looming.** Any industry slowdown will likely drive the need for better efficiency, enabled by technology. It will create an edge for forward-thinking firms.

Contractors that recognize some or all of these realities are starting to make significant changes in how they view and adopt technology. This opens the door for manufacturers, who, from their vantage points at the top of the value chain, now have a stronger position and reason to develop market-facing technology and be enablers of change in the industry.

## Creating a Frictionless Experience

As companies across the board work to advance their digital transformation strategies, manufacturers need to act now. With younger workers entering the industry—all of whom are accustomed to calling a rideshare or ordering for next-day delivery with just a few screen taps—the company that ignores this imperative does so at its own peril. It also risks isolating customers that want to be able to make B2B purchases as easily as they can on Amazon.

To capitalize on the opportunity that technology can bring requires manufacturers to have a focused strategy, a commitment to long-term success, and an internal champion who can lead the charge. Here are five points that all manufacturers should keep in mind as they develop and implement their market-facing technology strategies:

- Digital transformation is a long-term play that sets companies up for success five to 10 years from now. It's not a “one and done” exercise.
- There is no one-size-fits-all solution to every company's pain points. The right digital strategy requires both a highly personalized approach and one that can span all of its customers.
- As a first step, manufacturers must define both their current customer base and their “aspirational” customer base for the future.
- Manufacturers must know their customers at an intimate level, including:
  - Understanding their pain points
  - Understanding the success drivers for their businesses
  - Defining what they are looking for (and where the gaps and white space are)
  - Understanding how to integrate the right technology tools into your business (and how to use those tools to drive value)
- Manufacturers also have to be able to maximize technology as a competitive advantage (and create a unique value proposition around it).

The key to much of this is for manufacturers to meet their customers where they are now and where they are going, the latter of which is the real challenge. This forward-looking perspective is critical and requires a deep understanding of the market and its motivators. Executing on this not only helps manufacturers improve their market positioning, but also helps the contractors themselves break out of “laggard” mode and adopt more technology. It helps the manufacturers' business and their customers' business in a very “win-win” manner.



## Into the Great Wide Open

The future state of technology for manufacturers is virtually limitless. As artificial intelligence (AI), the Internet of Things (IoT), autonomous vehicles and fully integrated software solutions continue to mature, these disruptive forces will change the way the engineering and construction (E&C) industry does business. Here's what this could look like for manufacturers:

- **No more “guessing” about project schedules and inventory.** By incorporating AI, IoT and supply chain integration software, companies' project schedules, current material inventory and the end-to-end supply chain will all be integrated to allow for real-time deliveries. This, in turn, will enable smaller staging areas, more efficient material tracking and just-in-time delivery.
- **Robots at your service.** Using robotics and AI, manufacturers could effectively become the “installers” or prefabricators of their materials without taking on the human risk of construction. They'd be able to lease these robots to trade contractors who, in turn, will drive better customer retention (envision a tractor trailer full of robots being delivered to a job site to install drywall).
- **Intelligent materials.** Manufacturers will be able to design products that fully integrate into the building management system (BMS) and that use IoT and AI to allow owners to monitor the structural health of a building or piece of infrastructure. Manufacturers will also have greater access to data and ability to demonstrate ROI, based on it, as well as an inside track to repair/replacement activity.
- **Insider disruption of Amazon Business.** While Amazon Business is rapidly growing in the B2B e-commerce space, it does lack the industry focus and specificity to fully displace the current distribution network. This opens the door for an industry insider to develop a construction-specific e-commerce solution that fully meets the needs of the industry, spanning all product categories and trades.

While much of this seems very futuristic, the technology for all of it is real and in development right now. It will likely take a convergence of events to occur to make these or similar solutions a reality, but those who are not acting now will be observers when that shift happens.



## The Time Is Now

Some of the earliest examples of technology in the building products and materials industry produced an equal share of wins and losses. In other words, not all technology solutions met expectations. This may have kept a few laggards from investing in technology, but that case is no longer valid. There are plenty of successful business use cases that are now helping to shepherd even the most reluctant players into the digital age.

As technology “wins” continue to outpace the “losses,” the firms across the industry that are investing in tech are starting to outplay the ones that aren’t. As their appetite for technology increases, these companies are using it to outperform their competitors, achieve better margins, improve project delivery times and drive customer loyalty. As a result, we’re seeing companies making serious investments in construction technology, viewing it less as a luxury and more as a must-have for any firm that wants to stay competitive. We believe the time is now for manufacturers to focus on developing market-facing technology solutions and exert themselves as the leaders in the industry.





# Introduction to the Building Products Market Update

In the last edition of the Building Product Market Update, we discussed at length the mixed signals that we are seeing in the market. Unfortunately, for the economists and other prognosticators, the mixed signals remain as we enter the new decade. The fortunate side of this is that the music continues to play and chairs are aplenty. This edition of the market update focuses on the same major product and material categories: windows and doors, insulation, HVAC, plumbing and roofing systems. As we look to the next several years, we anticipate the residential market to begin to grow after last year's slight slowdown. Much of this is bolstered by growth in housing starts and an increasing demand for starter homes.

The nonresidential sector is expected to remain strong in the near term, but may slow in 2021. The slight pull-back is not expected to be deep, so suppliers shouldn't feel its impacts. We are expecting growth in performance products serving high-growth end markets (data centers, transportation, etc.) and differentiated products that improve upon existing options.

Looking forward, there are several themes that we believe will impact both the opportunity available to the building products and materials industry and the way in which it interacts with its end customers. Here are several themes we are examining and that the upper portion of the construction supply chain should be focused on:

- ***Contractors Pump the Breaks*** — “Volume Kills, Profit Thrills” has been a long-standing theme that we preach to the contractors with whom we consult. This mentality appears to be taking hold in the industry, with contractors beginning to self-inflict a reduction or slowdown in activity to prevent overcommitting themselves and putting undue risk on their organizations. This has a potential to impact the supply and demand curve and create an industry slowdown.
- ***Design-Delegation*** — Over the last 10-15 years, we've seen contractors taking a far more active role in design and specification. In today's market contractors are often guiding the decision on which products and materials are specified and installed. As a result, they are investing heavily in developing in-house design capabilities. This elevates the need for manufacturers to better understand and sell to them.
- ***Alternative Delivery Methods*** — The market has shifted away from the dominance of design-bid-build to a greater use of alternative project delivery methods that are oriented toward teamwork and partnership. For example, we are seeing design-build increase the value placed on second- and third-tier subcontractor involvement and also change the way in which all project stakeholders, including manufacturers, interact.

- ***Change in Business Models*** — All members of the construction supply chain are increasing their focus and resource allocation to more technology-focused and efficiency-oriented business models. Prefabrication and modular construction are gaining traction, and the flow of outside capital and intellectual horsepower is driving how to work better, smarter and faster.

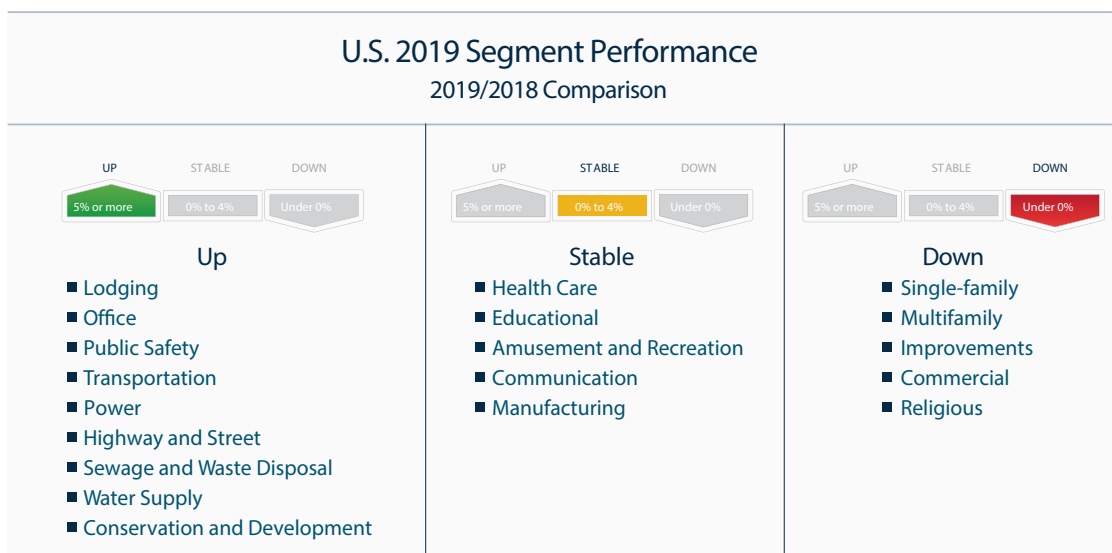
These themes will change the way manufacturers interact with the broader industry and could present challenges; but for forward thinkers, these themes will also present a tremendous amount of opportunity. This year is shaping up to be a very exciting point in time for the construction industry and the manufacturers who serve it.



# U.S. Engineering and Construction Outlook

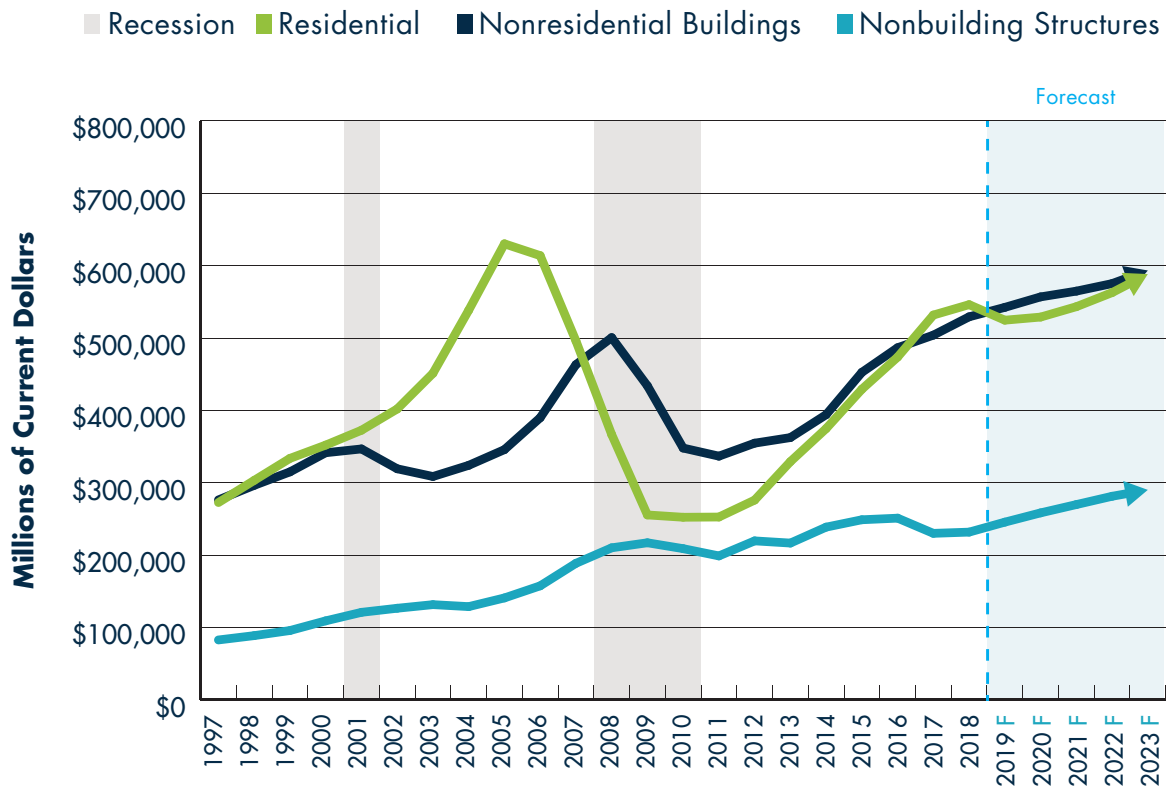
## Key Takeaway

- Total engineering and construction spending for the U.S. is forecast to end 2019 flat with 0% growth compared to 2018.



- Looking ahead to 2020, FMI forecasts a 1 percent increase in engineering and construction spending levels over 2019.
- Primary growth segments in 2019 are expected to include a majority of the public infrastructure segments (including power, highway and street, sewage and waste disposal, water supply, and conservation and development), alongside a small number of mixed public and private nonresidential building segments (public safety, transportation, lodging and office), all with growth rates of 5 percent or higher.
- Most other nonresidential building segments (health care, education, amusement and recreation, communication and manufacturing) are expected to end the year with growth roughly in line with rate of inflation and therefore be considered stable.
- All residential segments (single-family, multifamily and improvements), along with commercial and religious, are expected to end 2019 in decline. Multifamily residential, residential improvements, commercial, religious, amusement and recreation, and manufacturing are anticipated to experience declines in 2020.
- The latest Nonresidential Construction Index (NRCI) feedback suggests increased optimism heading into Q1 2020, at 53.9. The score is up considerably from a neutral reading of 50.4 last quarter and is the highest score since Q4 2018.

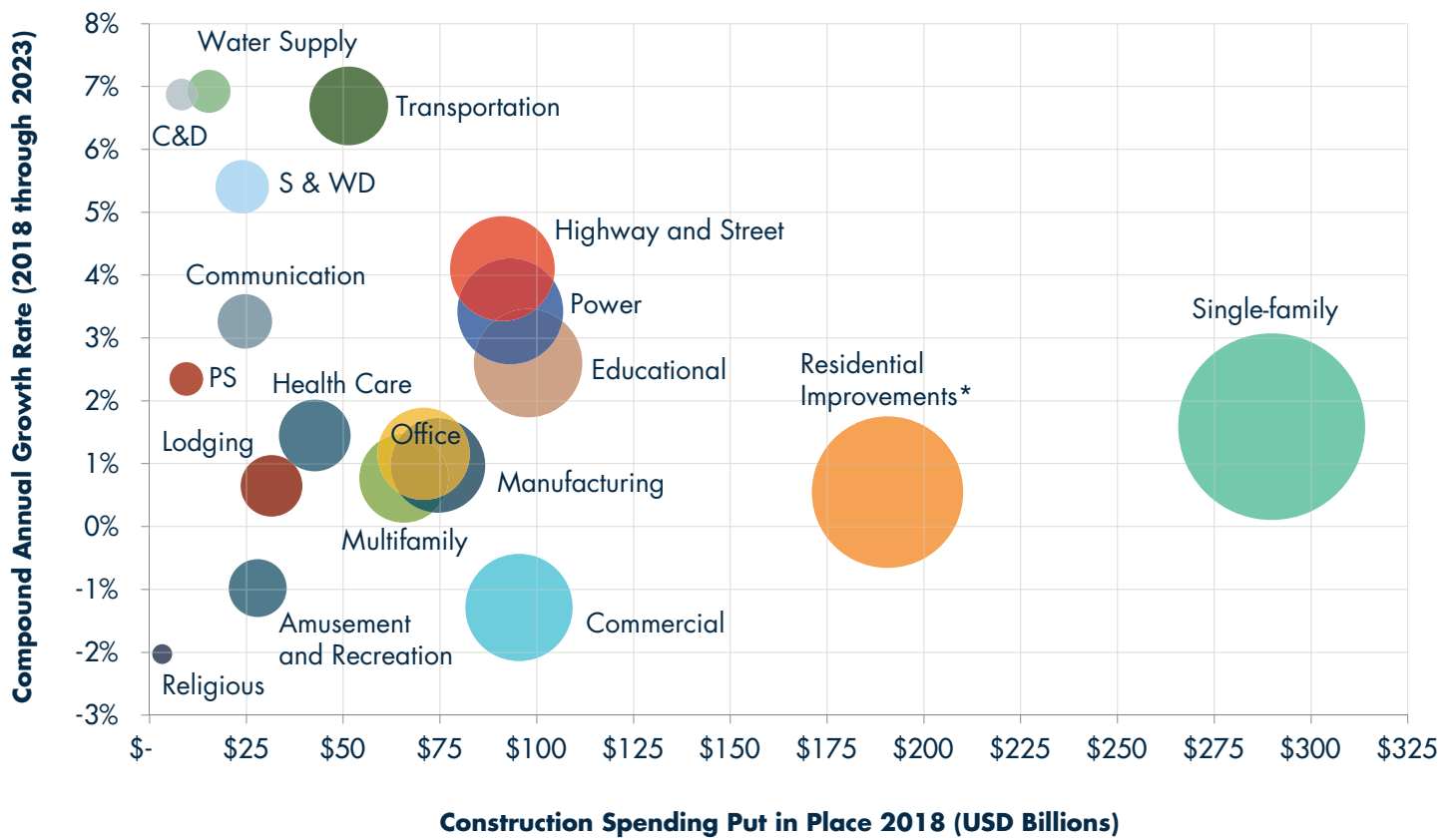
## Total Construction Put in Place Estimated for the U.S.



Source: U.S. Census and FMI Forecast



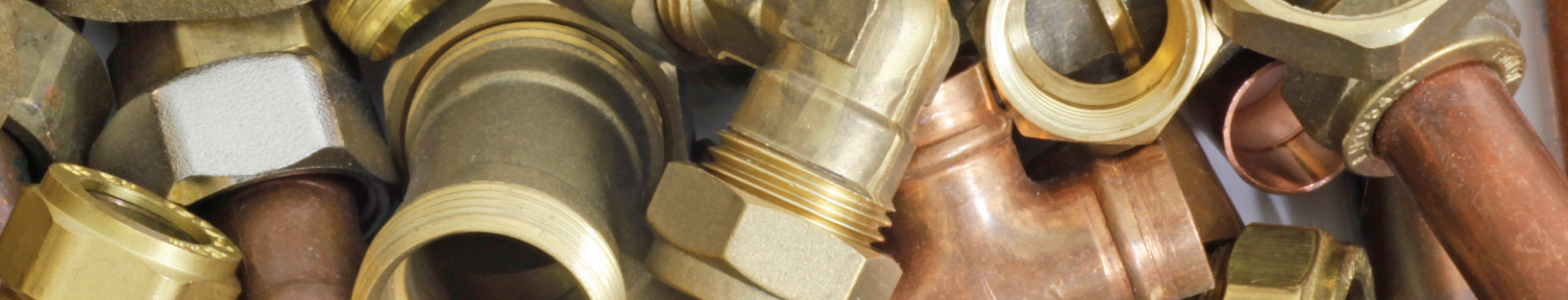
## Total Construction Spending Put in Place 2018 and Forecast Growth (2018-2023 CAGR) by Construction Segment



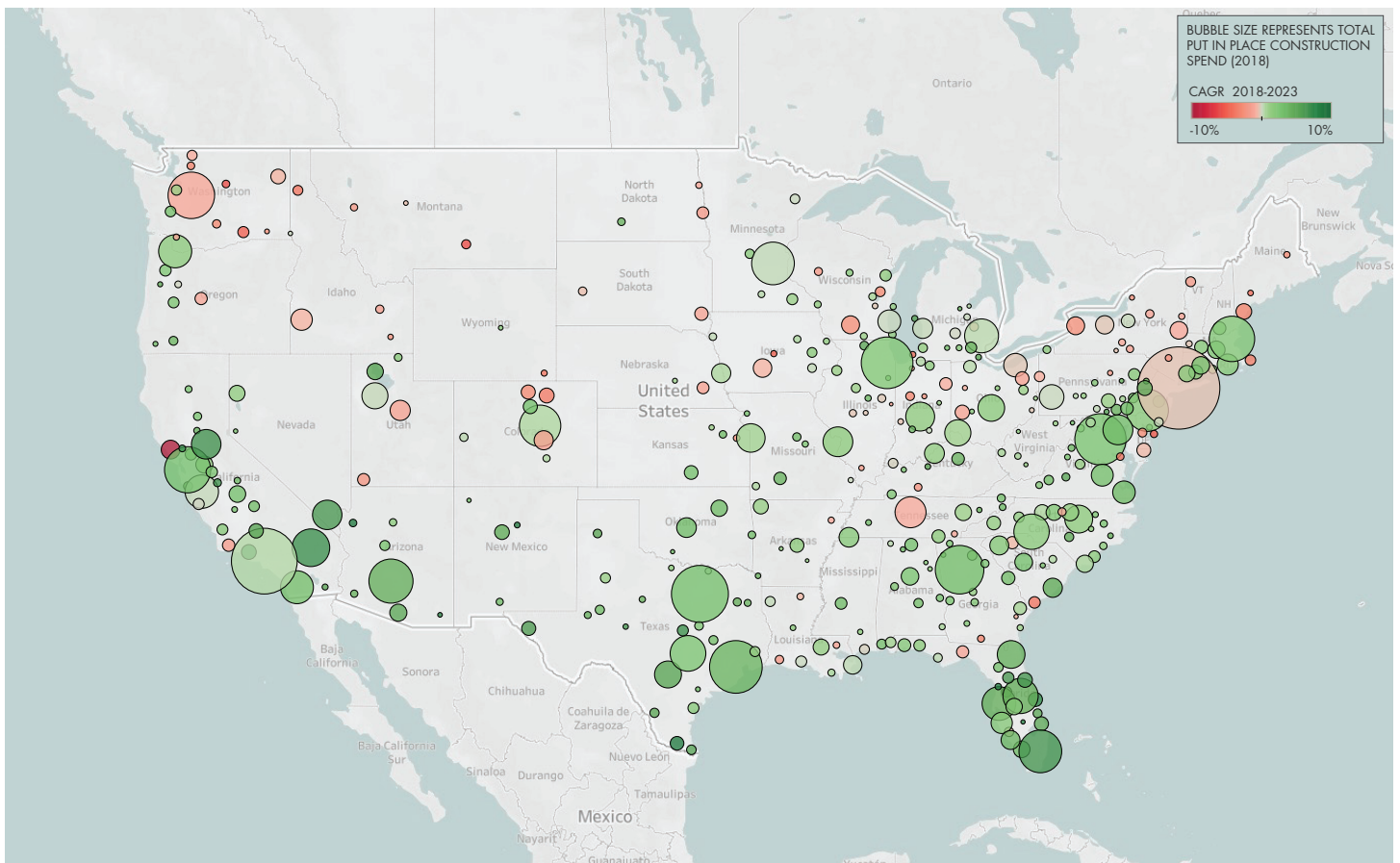
\* Improvements includes additions, alterations and major replacements. It does not include maintenance and repairs.

Source: U.S. Census and FMI Forecast



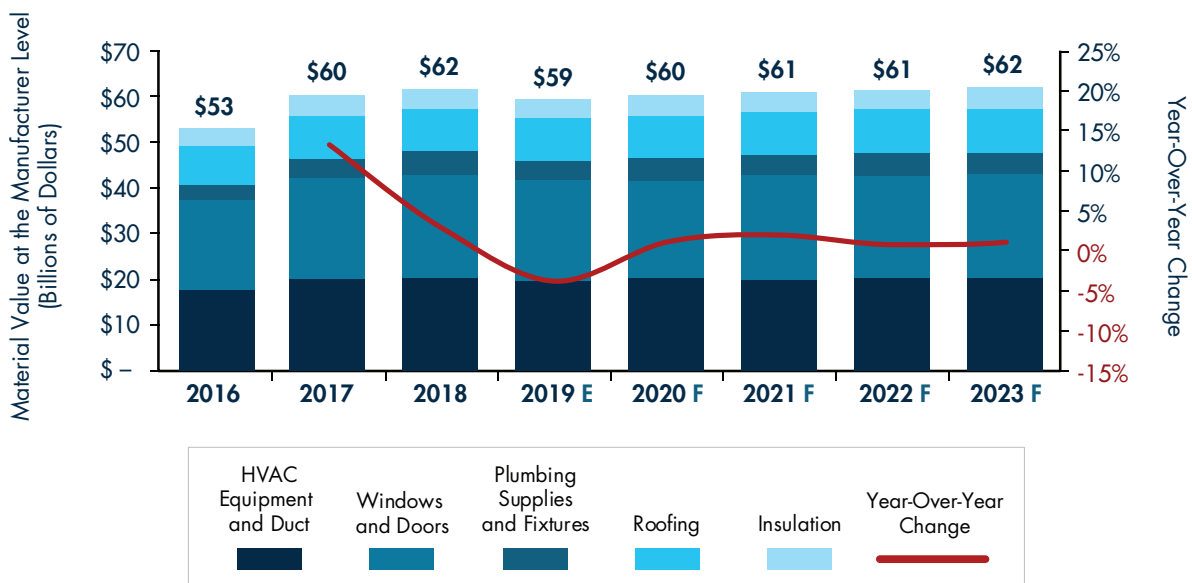


## Total Construction Spending Put in Place 2018 and Forecast Growth (2018-2023 CAGR) by Metropolitan Statistical Area



Source: FMI Forecast

## Residential Buildings First Quarter Forecast (Based on Q4 2019 Actuals)



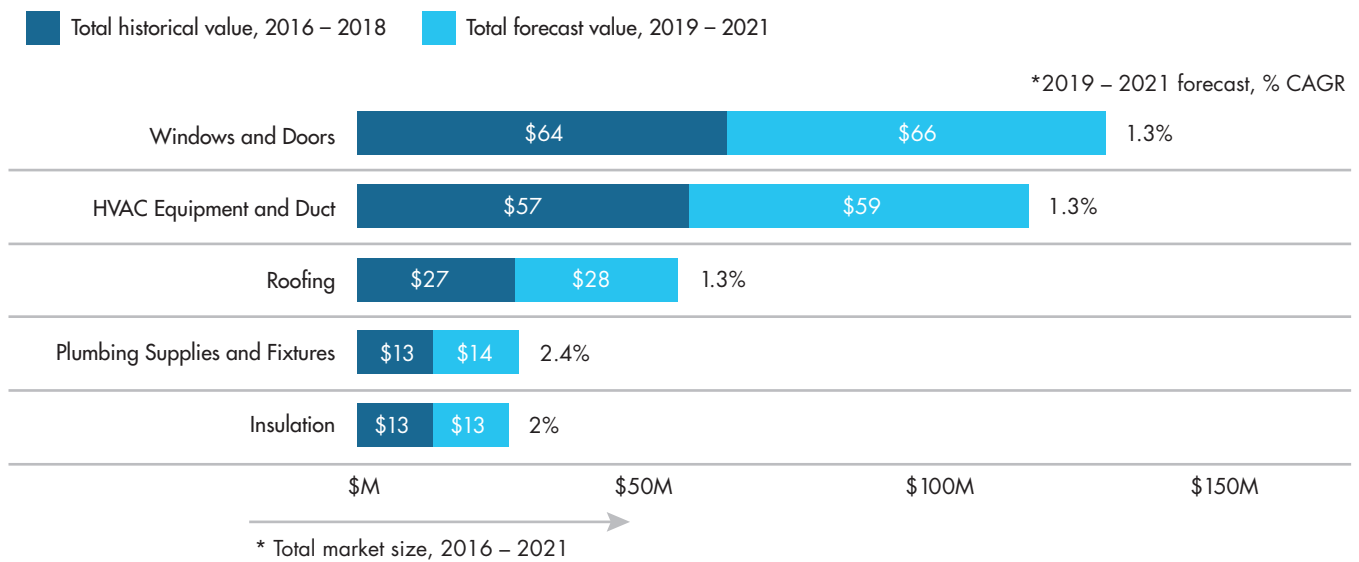
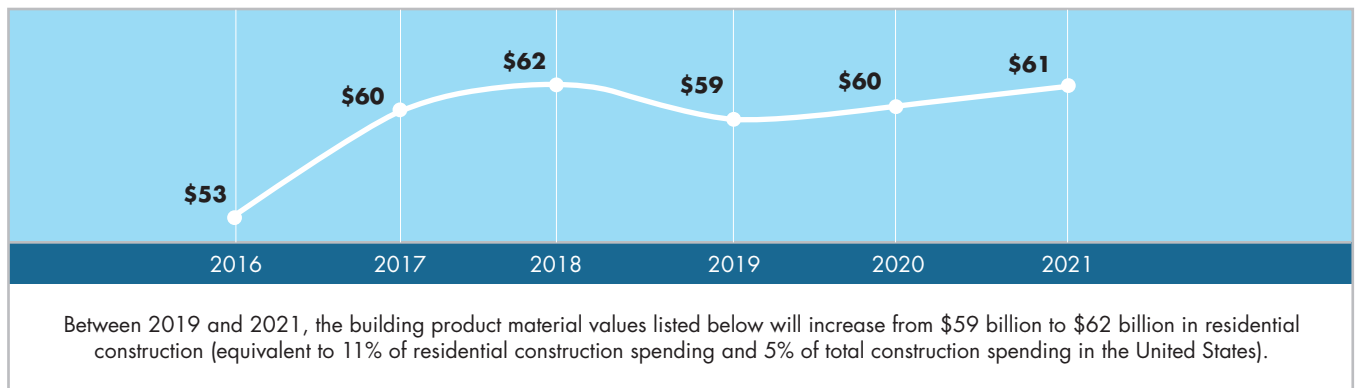
### Macro Trends

- Falling mortgage rates, low unemployment and an uptick in wages alleviated some pressure in single-family construction late in 2019.
- Smart home features, single-family rental properties and co-living spaces will influence buyer behaviors in the coming years, while builders navigate rising costs of labor, materials and land acquisition.
- Builders are only beginning to deliver a meaningful supply of entry-level homes.
- Property owners seeking improvements and renovations will benefit in the short term from eased demand in new single-family and multifamily construction, alleviating project hurdles tied to cost, labor and schedule constraints alongside relaxed competition.



## Residential Buildings

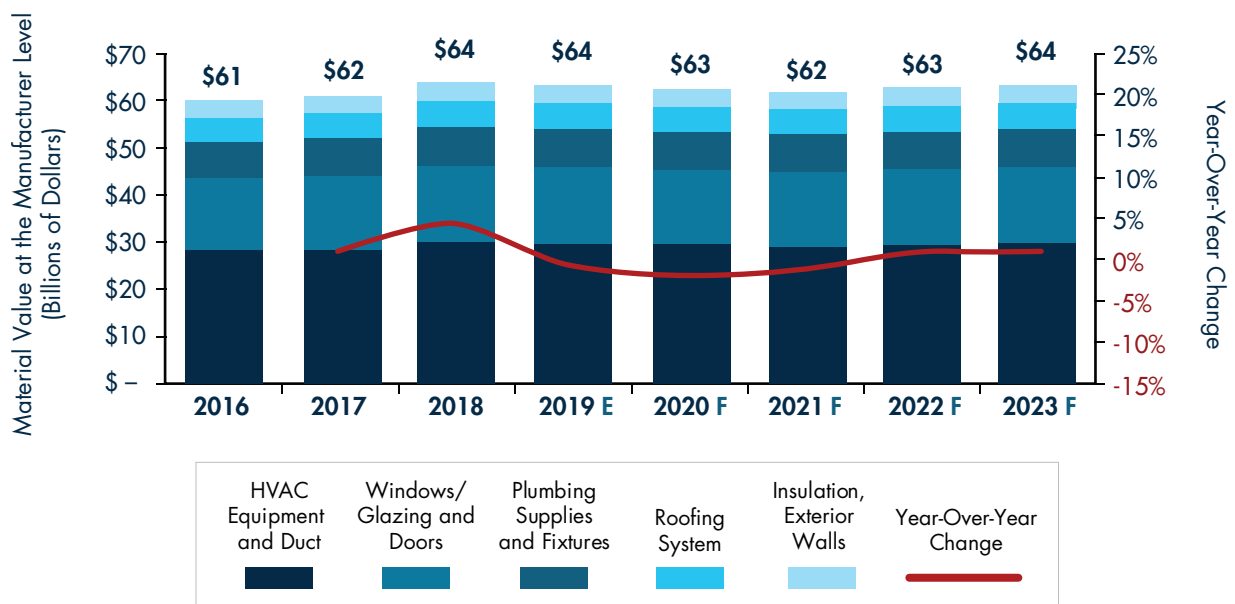
Material value at the manufacturer level, residential buildings, \$billions





## Nonresidential Buildings

### First Quarter Forecast (Based on Q4 2019 Actuals)



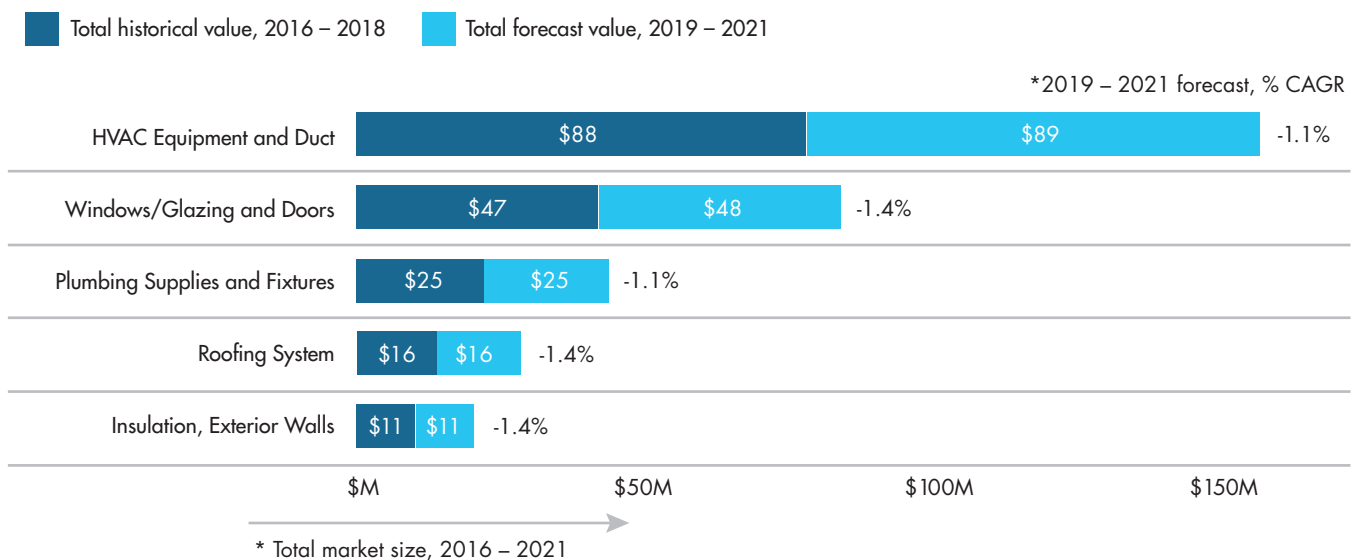
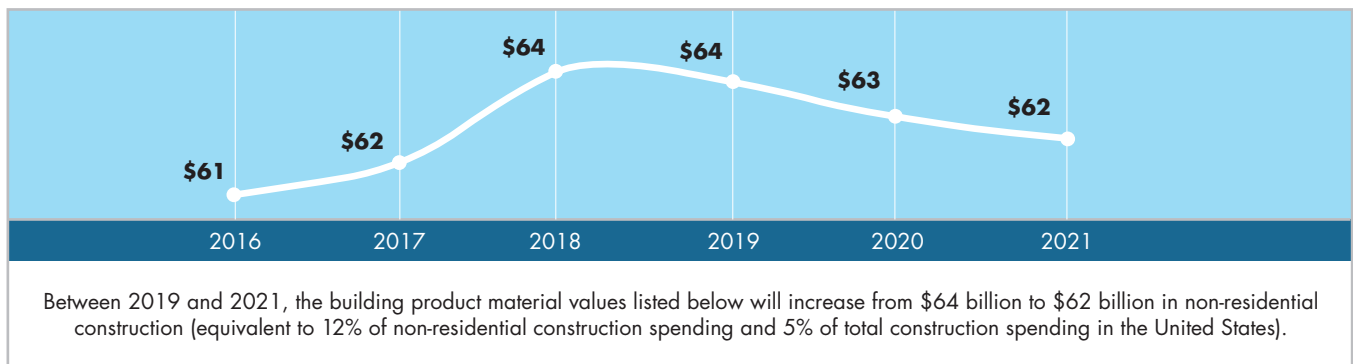
## Macro Trends

- The presidential election is expected to temper growth and create market uncertainty, possibly impacting the volume of near-term activity.
- The following niche market segments are expected to continue to outperform the market: technology, life sciences, data centers, coworking spaces and transportation facilities.
- Education will remain steady because of population demand requirements and the significant need for retrofit and upfit of existing schools due to age.
- Class A facilities across many end segments will remain in demand and create growth for well-positioned facilities.
- Modular and prefab in many segments (health care, education, lodging, etc.) are changing the way facilities are being built.



## Nonresidential Buildings

Material value at the manufacturer level, residential buildings, \$billions



## Estimated Material Value at the Manufacturer Level

### Total United States

Millions of Current Dollars

	2016	2017	2018	2019	2020	2021	2022	2023
<b>RESIDENTIAL BUILDINGS</b>								
Total Construction Volume PiP	473,687	531,755	546,136	520,987	522,296	535,087	553,907	577,743
<b><u>Manufacturer Net Material Value</u></b>								
Windows and Doors	19,136	21,910	22,505	21,691	21,829	22,242	22,412	22,603
Insulation	3,965	4,407	4,535	4,366	4,440	4,544	4,579	4,633
HVAC Equipment and Duct	17,481	19,599	20,143	19,387	19,529	19,908	20,062	20,238
Plumbing Supplies and Fixtures	4,042	4,653	4,783	4,569	4,687	4,793	4,829	4,884
Roofing	8,252	9,305	9,562	9,206	9,271	9,450	9,523	9,606
<b>Total</b>	<b>52,877</b>	<b>59,874</b>	<b>61,527</b>	<b>59,220</b>	<b>59,756</b>	<b>60,936</b>	<b>61,406</b>	<b>61,966</b>

	2016	2017	2018	2019	2020	2021	2022	2023
<b>NONRESIDENTIAL BUILDINGS</b>								
Total Construction Volume PiP	486,615	503,985	529,312	540,143	545,478	544,293	553,899	572,291
<b><u>Manufacturer Net Material Value</u></b>								
Windows/Glazing and Doors	15,152	15,570	16,270	16,185	15,780	15,742	16,003	16,195
Insulation, Exterior Walls	3,649	3,736	3,913	3,896	3,796	3,790	3,858	3,906
HVAC Equipment and Duct	28,759	28,881	30,174	39,984	29,721	29,316	29,602	29,878
Plumbing Supplies and Fixtures	7,899	8,127	8,483	8,430	8,361	8,248	8,325	8,401
Roofing System	5,181	5,243	5,482	5,453	5,314	5,301	5,390	5,456
<b>Total</b>	<b>60,640</b>	<b>61,557</b>	<b>64,321</b>	<b>63,948</b>	<b>62,972</b>	<b>62,398</b>	<b>63,178</b>	<b>63,836</b>

Source: FMI Corporation

# Appendix:

## Product Definitions

### Residential

**Windows and Doors** – Products and associated hardware, including operable windows, skylights, fixed glass, sliding doors, patio doors, entry and service doors, passage doors, garage doors

**Insulation** – Insulation products utilized in the building envelope, equipment and appliances, including fiberglass, mineral wool, EPS, XPS and foam materials

**HVAC Equipment and Duct** – Including equipment (furnaces, air conditioning compressors and condensers, dehumidifiers, split systems, boilers), filters, controls, distribution duct and boxes, registers

**Plumbing Supplies and Fixtures** – Including piping, valves, connections (supply, distribution, waste), meters, water heaters, sinks, toilets, faucets, drains, shower mixers, pans, bathtubs, irrigation, fire sprinklers

**Roofing** – Including shingles, metal, tile and concrete materials with underlayment and flashings for sloped roofs. Flat-roof materials are excluded from this category and are included with the Nonresidential Buildings, Roofing System category

### Nonresidential Buildings

**Windows/Glazing and Doors** – Products and associated hardware, including operable/inoperable windows and glazing, skylights, roof hatches, storefront, curtainwall, sliding doors, patio doors, entry doors, revolving doors, fire and security doors, overhead doors

**Insulation, Exterior Walls** – Insulation products utilized in the building wall system, including fiberglass, glass-skinned wall boards, EPS, XPS and foam materials

**HVAC Equipment and Duct** – Including equipment (boilers, chillers, air handlers, furnaces, compressors, condensers, dehumidifiers, split systems, filters), controls, distribution duct, valves and boxes, registers

**Plumbing Supplies and Fixtures** – Including piping (supply, distribution, waste), valves, elbows, fittings, hangers, meters, water heaters, boilers, sinks, toilets, faucets, drains, shower mixers, pans, bathtubs, irrigation, fire sprinklers

**Roofing System** – Sloped-roof systems, including cover material (shingles, metal, tile) with flashing, underlayment and insulation. Low-slope and flat-roof systems include cover material (TPO, EPDM, metal, PVC, BUR), insulation board, cover board, flashing, adhesives, screws. Excludes roof deck material





# About the Authors

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**Paul Giovannoni** is a principal within FMI's Strategy practice, and his primary focus is partnering with members of the building products industry by assisting them in developing their strategies relating to growth, value creation and new product launches. Paul's extensive experience working with many of the most well-respected manufacturers and distributors in the industry, combined with his deep relationships in the contractor community, enables him to bring a comprehensive perspective of the market to his clients. Paul can be reached at [pgiovannoni@fminet.com](mailto:pgiovannoni@fminet.com).



**Randy Giggard** is a manager of FMI's Market Information Group. He is responsible for design, management and performance of primary and secondary market research projects and related research activities, including economic analysis and modeling, construction market forecasting and database management. Randy's particular expertise is in the areas of market sizing and modeling, competitive analysis, sales and market performance evaluations, buying practices and trends analysis. Randy can be reached at [rgiggard@fminet.com](mailto:rgiggard@fminet.com)



**Russ Young** is a senior consultant and leads FMI's technology partnering program, having worked with tech partnering programs his entire career. Russ also provides experienced consulting to stakeholders in the E&C industry, enabling them to maximize the benefits of technology solutions in their business. Russ can be reached at [ryoung@fminet.com](mailto:ryoung@fminet.com)

# Exclusively Focused on the Built Environment

## Who We Are

FMI is a leading consulting and investment banking firm dedicated exclusively to the Built Environment.

We serve the industry as a trusted advisor. More than six decades of context, connections and insights lead to transformational outcomes for our clients and the industry.

### **FMI** CONSULTING

FMI Consulting has a deeper understanding of the built environment and the leading firms across its value chain than any other consulting firm. We know what drives value. We leverage decades of industry-focused expertise to advise on strategy, leadership & organizational development, operational performance and technology & innovation.

#### PRACTICE AREAS

##### Strategy

- Market Research
- Market Strategy
- Business Development
- Strategic Planning

##### Leadership & Organizational Development

- Leadership & Talent Development
- Succession Management
- High-performing Teams
- Corporate Governance
- Executive Coaching

##### Performance

- Operational Excellence
- Risk Management
- Compensation
- Peer Groups

##### Technology & Innovation

- Market Accelerator
- Partner Program
- Tech Readiness Assessment
- Sourcing & Adoption

### **FMI** CAPITAL ADVISORS

FMI Capital Advisors, a subsidiary of FMI Corporation, is a leading investment banking firm exclusively serving the Built Environment. With more than 700 completed M&A transactions, our industry focus enables us to maximize value for our clients through our deep market knowledge, strong technical expertise and unparalleled network of industry relationships.

#### SECTOR EXPERTISE

- Architecture, Engineering & Environmental
- Building Products
- Chemicals
- Construction Materials
- Contractors
- Energy Service & Equipment
- Energy Solutions & Cleantech
- Utility Transmission & Distribution

#### SERVICES

- M&A Advisory
- ESOP Advisory
- Valuations
- Ownership Transfer

#### EXECUTIVE EDUCATION

- Acquisitions in the Construction Industry
- Ownership Transfer & Management Succession



## for the Built Environment

### TRAINING PROGRAMS

Over 10,000 industry leaders have completed FMI training programs, which span the entire management spectrum, from new managers to senior executives.

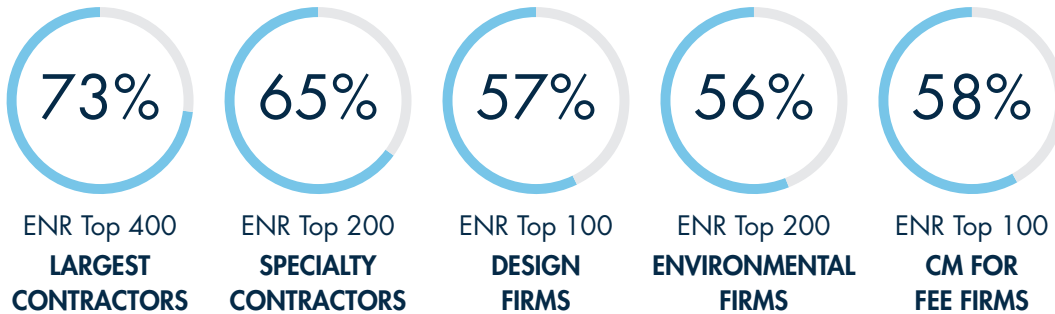
- ④ Emerging Managers Institute
- ④ Field Leader Institute
- ④ Project Manager Academy
- ④ Construction Executive Program
- ④ Leadership Institute
- ④ Leading Operational Excellence
- ④ Construction Selling Skills
- ④ Market & Selling Strategies
- ④ Ownership Transfer & Management Succession
- ④ Acquisitions in the Construction Industry

### FMI PEER GROUPS

FMI manages nearly 50 individual peer groups across the industry. Connecting businesses through networking, expanding visions and providing feedback.

- ④ Organizational Structure and Development
- ④ Human Resources
- ④ Business Development
- ④ Information Technology
- ④ Operations Management
- ④ Financial Management

### FMI CLIENT HIGHLIGHTS



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