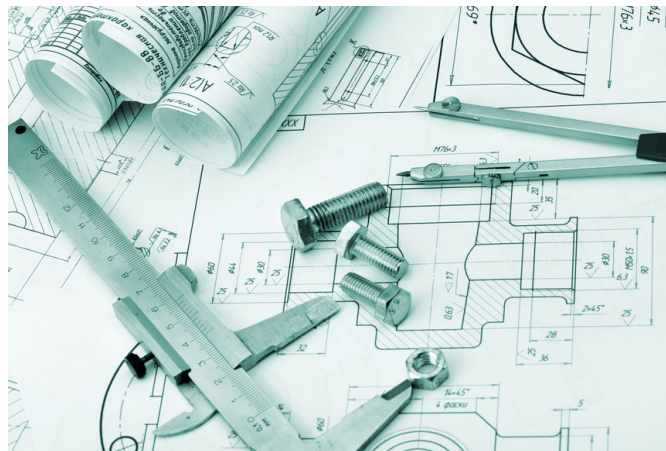


MS Capital Market News:  
*Outlining Trends in the Architectural & Engineering Services Industries*



Winter 2019

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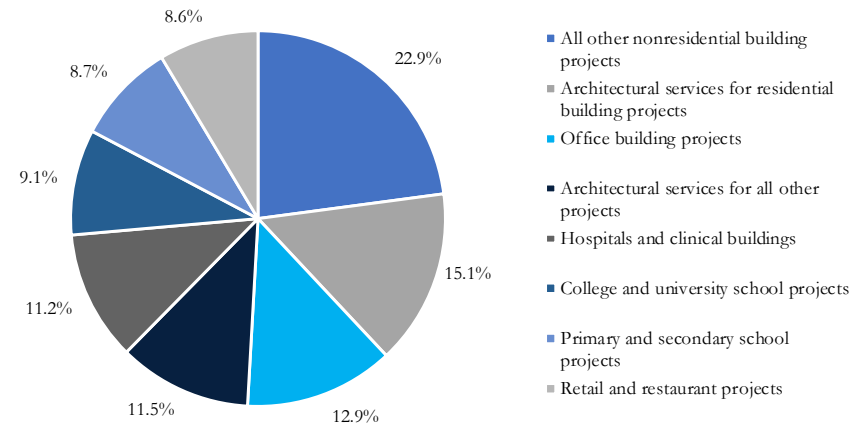
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# Architectural Services in the US

## Architectural Services Sector Highlights

- 2019 revenue: \$46.4 billion
- 2019 profit: \$3.6 billion
- Annual growth 2014 – 2019: 4.1%
- Annual growth projected 2019 – 2024: 1.5%
- Key industry drivers: value of private nonresidential construction, value of residential construction, access to credit, corporate profit, consumer confidence index, housing starts
- Main activities: architectural design, architectural consulting, architectural services, building architectural design services

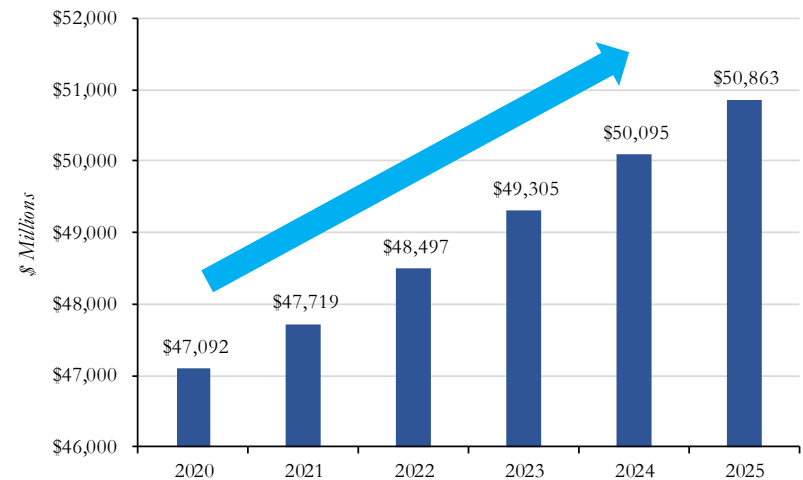
## Products and Services Segmentation



## Architectural Services Sector Observations & Outlook

- The Architects industry derives the bulk of its revenue from nonresidential building design. Revenue is generated from fee-based contracts for pre-planning and design services related to construction and building projects. A much smaller share of industry revenue is generated from contracts related to housing construction; however, for small firms and nonemployees the residential construction market makes up a larger portion of their revenue. Over the five years to 2019, IBISWorld estimates that industry revenue has increased at an annualized rate of 4.1% to \$46.4 billion, including an estimated rise of 1.9% in 2019 alone.

## Architectural Services Sector Expected Revenue Growth



Sources: IBISWorld

# Engineering Services in the US

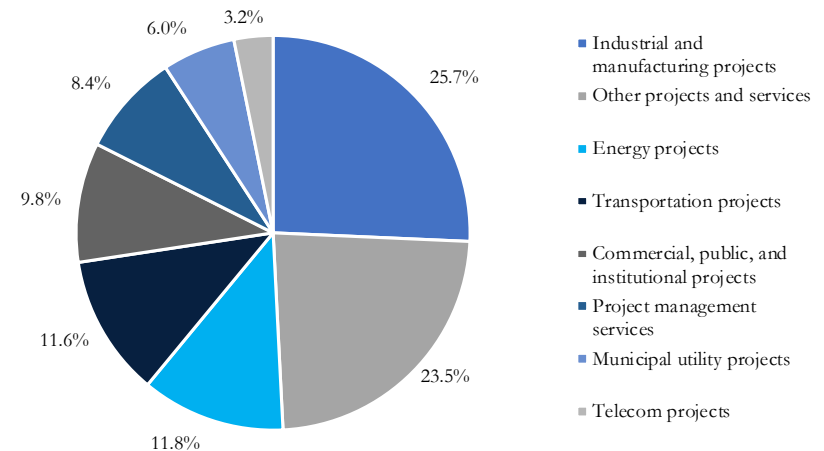
## Engineering Services Sector Highlights

- 2019 revenue: \$273.4 billion
- 2019 profit: \$26.5 billion
- Annual growth 2014 – 2019: 2.4%
- Annual growth projected 2019 – 2024: 2.0%
- Key industry drivers: value of private nonresidential construction, value of residential construction, value of utilities construction, local and state government spending, yield on the 10-year treasury note, demand from mining
- Main activities:

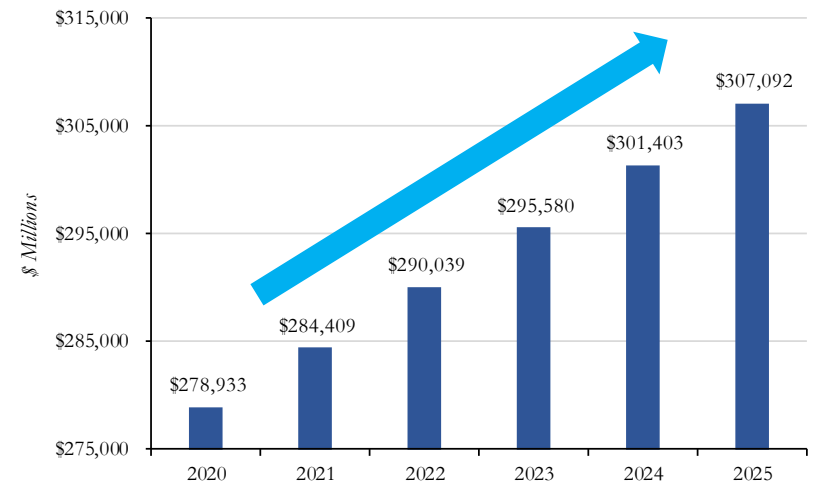
## Engineering Services Sector Observations & Outlook

- Over the five years to 2019, the industry has performed modestly, with industry revenue growing largely in pace with the US economy at large, recording an annualized 2.4% increase in revenue to reach \$273.4 billion, including anticipated growth of 3.0% in 2019 alone. Revenue growth has primarily been a result of an increase in the value of private nonresidential construction, which can be used as a proxy for demand for industry services.
- Over the next five years, the Engineering Services industry is expected to experience steady demand due to still rising private investment in large-scale projects and continued recovery in oil and natural gas prices, which will increase demand for industry services from industrial customers.

## Products and Services Segmentation



## Engineering Services Sector Expected Revenue Growth

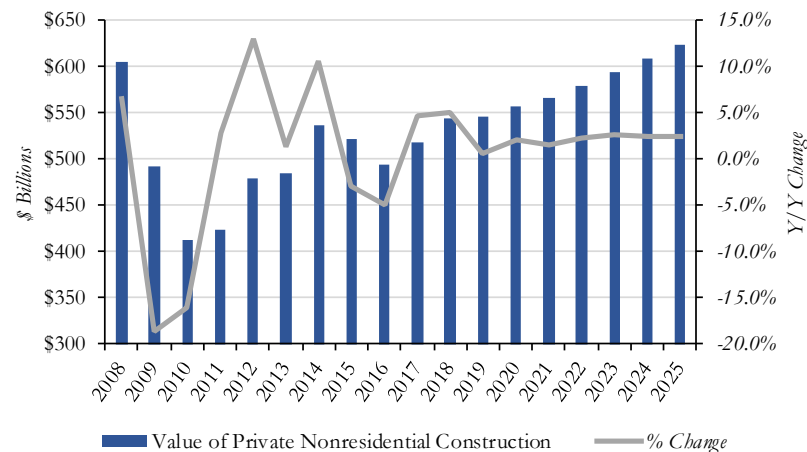


# Key Industry Drivers

## Value of Private Nonresidential Construction

- Estimated value in 2020: \$508.78 billion
- 2015-2020 Compound Growth: *-0.53%*
- Forecast value in 2025: \$592.20 billion
- 2020-2025 Compound Growth: *3.08%*
- The value of private nonresidential construction refers to investment in office buildings, hospitals, factories, power plants, mining shafts, communication lines, farms, railroads, schools, brokers' commissions and net purchases of used structures. The data for this report is presented in chained 2012 dollars.

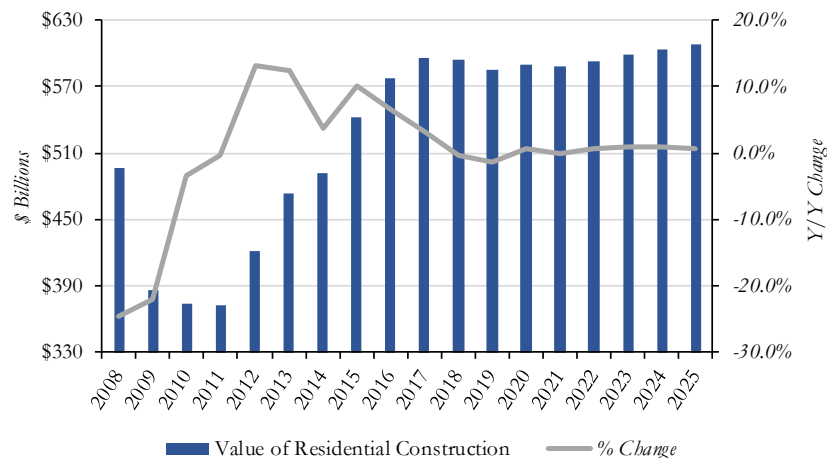
## Value of Private Nonresidential Construction



## Value of Residential Construction

- Estimated value in 2020: \$583.84 billion
- 2015-2020 Compound Growth: *1.50%*
- Forecast value in 2025: \$607.17 billion
- 2020-2025 Compound Growth: *0.79%*
- This driver, formally known as real private residential investment in structures, measures spending by individuals and businesses on residential construction. This includes expenditure on single-family and multi-family structures, manufactured homes, dormitories, improvements on existing locations, brokers' commissions and net purchases of used structures. The data for this report is presented in chained 2012 dollars.

## Value of Residential Construction



# Key Industry Drivers

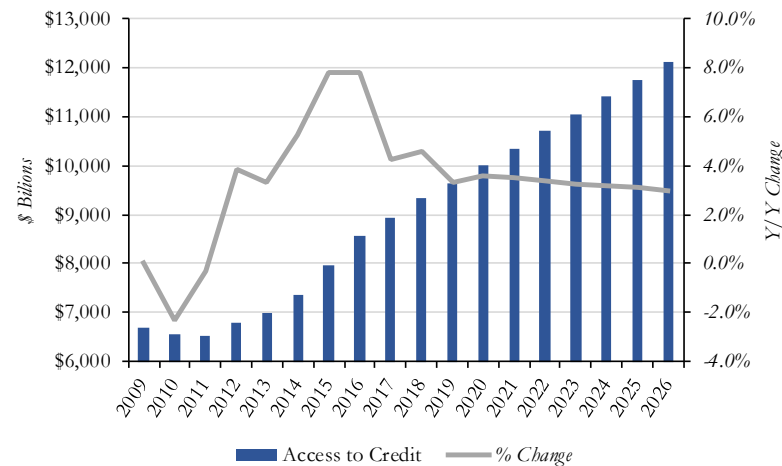
## Access to Credit

- Estimated value in 2020: \$10,002.90 billion
- 2015-2020 Compound Growth: 4.70%
- Forecast value in 2025: \$11,756.91 billion
- 2020-2025 Compound Growth: 3.28%
- Access to credit refers to the borrowing capacity advanced by a commercial bank to an individual, firm or organization in the form of loans, cash credit and overdrafts. Credit enables households to borrow against future income and firms to invest in machinery and equipment. The data for this report is measured as the value of the loans and leases in bank credit. The values presented in this report are annual figures, derived from equally weighted monthly averages of the loans and leases in commercial bank credit.

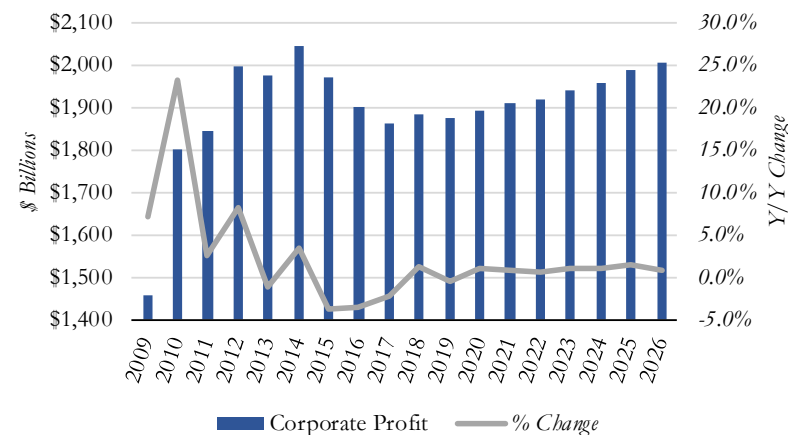
## Corporate Profit

- Estimated value in 2020: \$1,892.02 billion
- 2015-2020 Compound Growth: -0.79%
- Forecast value in 2025: \$1,987.67 billion
- 2020-2025 Compound Growth: 0.99%
- This item refers to the corporate profit earned across all industries. Profit is calculated by subtracting the value of the following from revenue: wages after inventory valuation and capital consumption adjustments. Data is presented in chained 2012 dollars.

## Access to Credit



## Corporate Profit

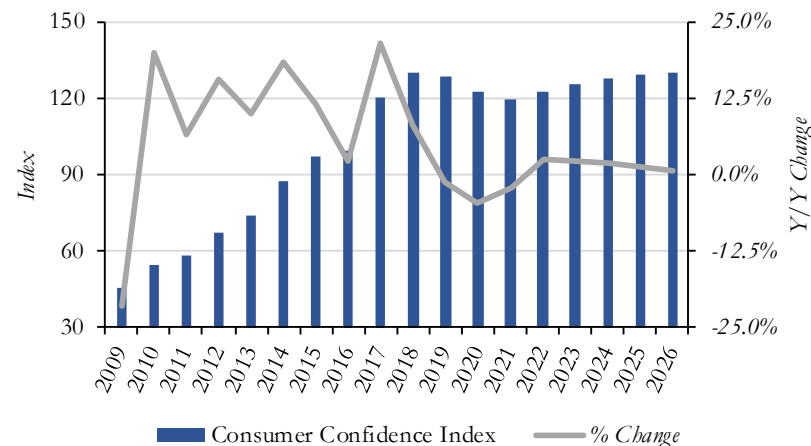


# Key Industry Drivers

## Consumer Confidence Index

- Estimated value in 2020: 122.5 index points
- 2015-2020 Compound Growth: 4.75%
- Forecast value in 2025: 129.0 index points
- 2020-2025 Compound Growth: 1.05%
- The Consumer Confidence Index is calculated by The Conference Board using a monthly survey. The survey includes questions related to household finances, business conditions, employment, income and economic outlook. The values presented in this report are annual figures, derived from equally weighted monthly averages.

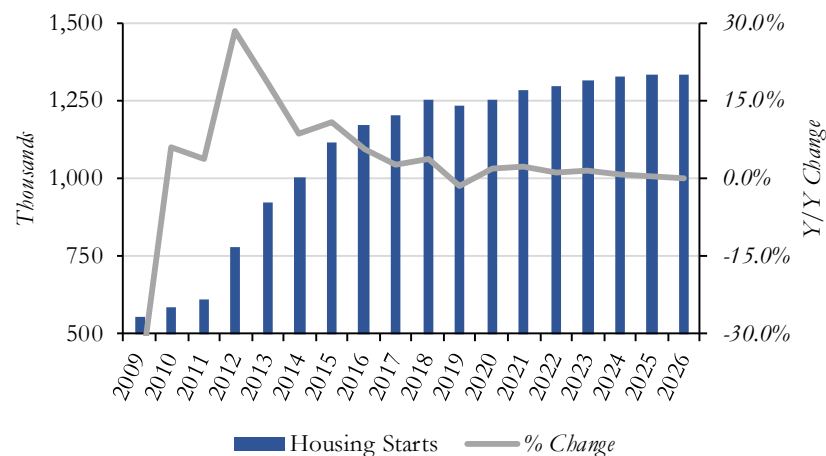
## Consumer Confidence Index



## Housing Starts

- Estimated value in 2020: 1,253.0 Thousands
- 2015-2020 Compound Growth: 2.42%
- Forecast value in 2025: 1,333.0 Thousands
- 2020-2025 Compound Growth: 1.25%
- This driver measures the number of new, privately owned housing units started in a given year. This includes both single-unit and multiunit developments. The data is the sum of unadjusted monthly data.

## Housing Starts

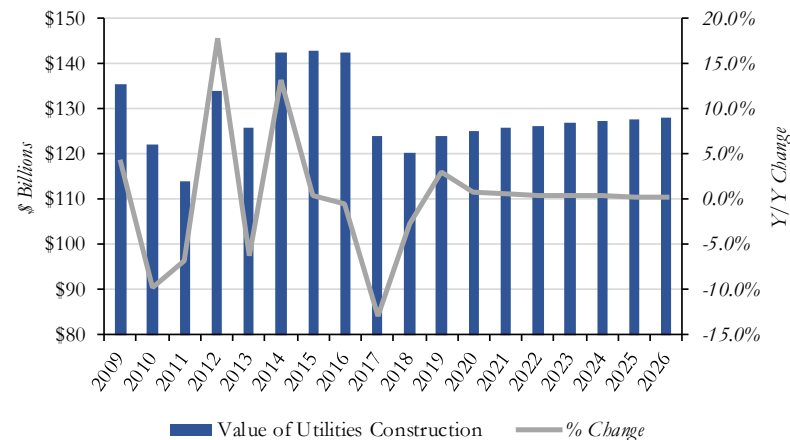


# Key Industry Drivers

## Value of Utilities Construction

- Estimated value in 2020: \$124.94 billion
- 2015-2020 Compound Growth: -2.66%
- Forecast value in 2025: \$127.59 billion
- 2020-2025 Compound Growth: 0.42%
- The annual public and private expenditure toward the construction of power, sewage or water supply infrastructure represents the value of utilities construction. Data is presented in billions of chained 2012 dollars.

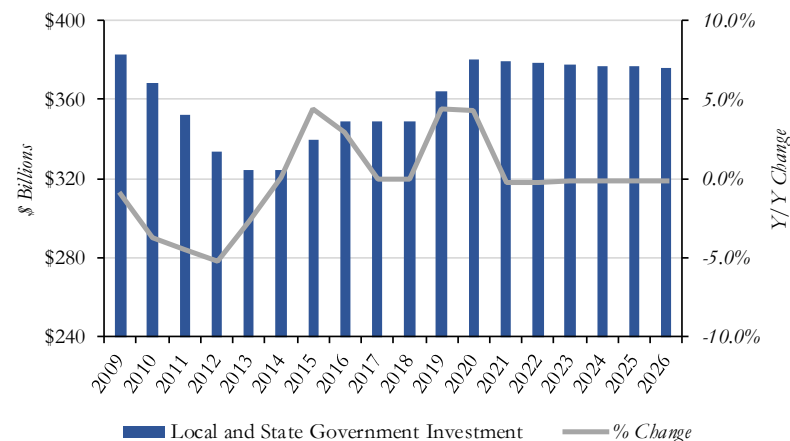
## Value of Utilities Construction



## Local and State Government Investment

- Estimated value in 2020: \$380.22 billion
- 2015-2020 Compound Growth: 2.30%
- Forecast value in 2025: \$376.65 billion
- 2020-2025 Compound Growth: -0.19%
- The value of private nonresidential construction refers to investment in office buildings, hospitals, factories, power plants, mining shafts, communication lines, farms, railroads, schools, brokers' commissions and net purchases of used structures. The data for this report presented in chained 2012 dollars.

## Local and State Government Investment



# Key Industry Drivers

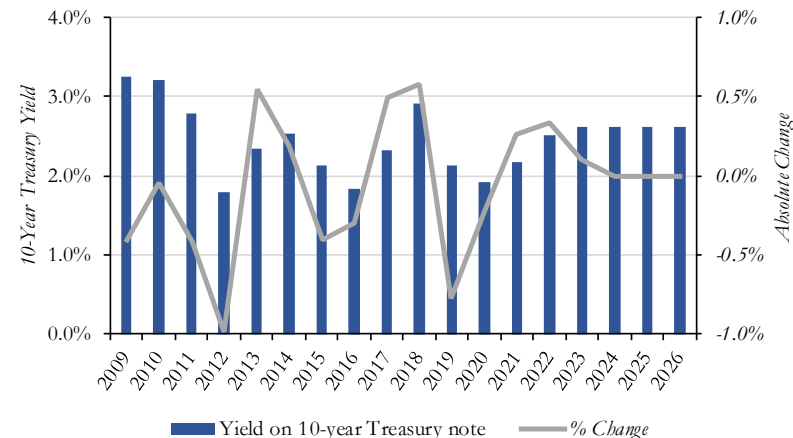
## Yield on 10-year Treasury Note

- Estimated value in 2020: \$124.94 billion
- 2015-2020 Compound Growth: -2.66%
- Forecast value in 2025: \$127.59 billion
- 2020-2025 Compound Growth: 0.42%
- The annual public and private expenditure toward the construction of power, sewage or water supply infrastructure represents the value of utilities construction. Data is sourced from the US Census and is presented in billions of chained 2012 dollars.

## Demand from Mining

- **Mining Revenue Performance:** On account of the major industries in the Mining sector experiencing substantial decreases in revenue over the past five years, total Mining sector revenue is expected to fall at an annualized rate of 3.9% to \$587.8 billion over the five years to 2019. Since the majority of commodity prices crashed in 2015 and 2016, industry revenue decreased 57.8% and 14.9% in 2015 and 2016, respectively. This depressed revenue during the five-year period, despite an estimated 5.9% revenue increase in 2019 and an expected as commodity prices continue to recover.

## Yield on 10-year Treasury Note



## Demand from Mining

- **Mining Revenue Outlook:** Mineral prices, together with trends in output, will continue to drive the performance of the Mining sector over the five years to 2024. Over the next five years, improving macroeconomic conditions and commodity prices will likely buoy most of the industries in the Mining sector, which is expected to contribute to overall revenue growth for the sector at an annualized rate of 5.8% during the five-year period.

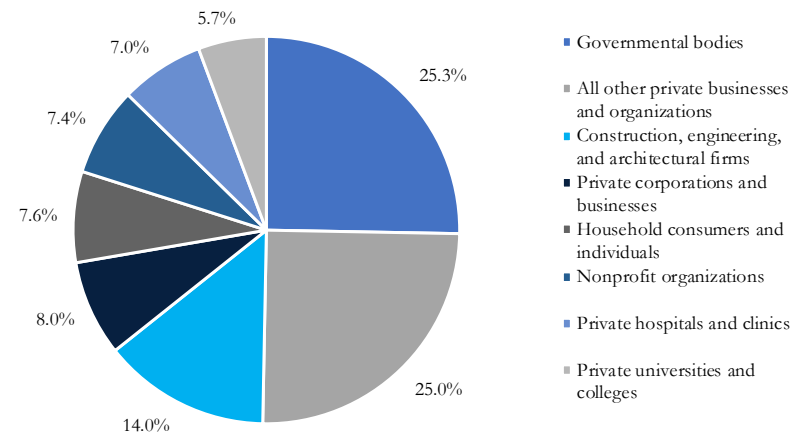


# Major Market Segmentations

## Architectural Services Major Market Segmentation

- Private organizations represent the largest market segment for the Architects industry by far, comprising 45.7% to industry revenue in 2019. Broadly this market segment can be defined as all private corporations and entities. However, it is more difficult to define it in more specific terms due to the sheer variety of organizations contained in the segment. Based on data from the US Census Bureau, IBISWorld estimates that 8.0% of this segment consists of project contract revenue from private corporations and businesses. Further, private hospitals and healthcare customers are estimated to make up another 7.0% of this customer segment, followed by private colleges and universities who make up 5.7%.

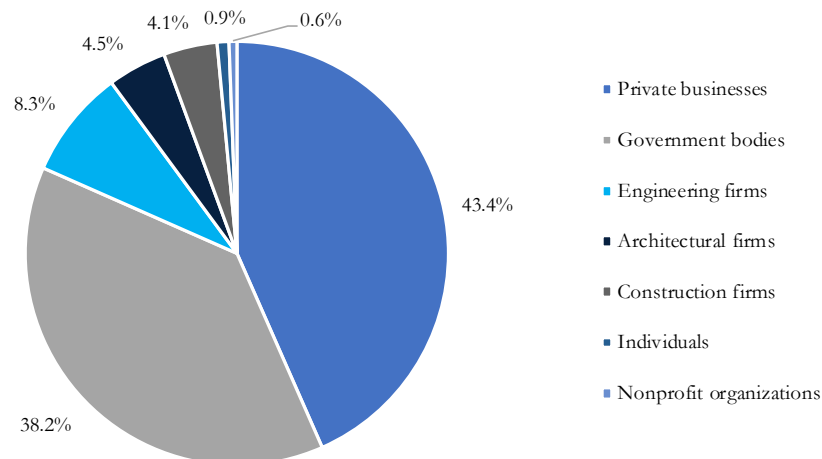
## Architectural Services Major Market Segmentation



## Engineering Services Major Market Segmentation

- Firms in the Engineering Services industry provide services to a range of markets that require construction planning and design. Private businesses are the industry's largest market; however, many government construction programs also use private engineering services. Additionally, the industry provides services to specialized engineering, architectural and construction companies. Private businesses are the largest market for industry operators, estimated to account for 43.4% of industry revenue in 201. Major companies require engineering services for a variety of construction processes ranging from major commercial and industrial buildings to large residential complexes.

## Engineering Services Major Market Segmentation



# Architectural and Engineering Services Comparable Transactions

Date	Target	Buyer(s)	Target Business Description
12/6/19	Bracke.Hayes.Miller.Mahon, Architects LLP	Bray Associates Architects, Inc.	Bracke.Hayes.Miller.Mahon, Architects LLP provides architecture and planning services. It offers programming, planning, including master planning, site planning and site selection, design, including schematic design, design development, interior design and space planning, construction administration, bidding, contract negotiations and contract documents, working drawings and specifications, energy efficiency, engineering design, presentation materials CADD, computer aided design and drafting, cost estimating, including preliminary cost estimates for design solutions, time scheduling, and reports and agency approvals services. The company was founded in 1961 and is headquartered in Moline, IL.
12/3/19	Pie Consulting & Engineering, Inc.	Lerch Bates, Inc.	Pie Consulting & Engineering, Inc. provides engineering, rehabilitative design and construction management services. The firm also offers enclosure consulting and commissioning, forensic engineering, field performance testing, construction consulting, litigation consulting, repair and rehabilitation services. The company was founded by Craig Sellers and Paul M. Duncan in April 1999 and is headquartered in Arvada, CO.
11/26/19	QC Data LLC	Kohlberg & Co. LLC; EN Engineering LLC	QC Data LLC provides engineering and data services. It offers engineering design, data management, field audit services, data improvement, engineering support, and data maintenance. The company was founded in 1997 and is headquartered in Greenwood Village, CO.
11/25/19	Environmental Partners, Inc.	TRC Cos., Inc.; New Mountain Capital LLC	Environmental Partners, Inc. provides engineering consulting services. It offers due diligence, site investigation and characterization, remediation system design, implementation and optimization, and regulatory closure and litigation or negotiation support. The company was founded on March 5, 1990 and is headquartered in Issaquah, WA.
11/21/19	Co-Energy America, Inc.	Kohler Power Systems; Clarke Energy Holdings Ltd.	Co-Energy America, Inc. engages in the development of packaged combined heat and power systems. It offers feasibility, engineering and design, manufacturing, installation, and monitoring services. The company was founded in 1998 and is headquartered in Upton, MA.
11/20/19	Long Engineering, Inc.	Bernhard Capital Partners Management LP; Atlas Technical Consultants LLC	Long Engineering, Inc. provides civil engineering services. The firm offers planning and land development, stormwater management, sanitary sewer, aviation infrastructure, construction engineering and inspection, bridge design and transportation services. The company was founded by J. Ellen Long in 1997 and is headquartered in Atlanta, GA.
11/20/19	D.W. Smith Associates LLC	PS&S Integrated Services	D.W. Smith Associates LLC provides professional consulting services. It offers project management, engineering, planning, surveying, landscape design, environmental and geographic information system services. The company was founded in 1965 and is headquartered in Wall Township, NJ.
11/18/19	Cavache, Inc.	Ahtna Marine & Construction Co. LLC	Cavache, Inc. provides civil engineering services. Its services include hydraulic dredging, beach nourishment, land & water creation, mechanical dredging and wetland construction. The company is headquartered in Pompano Beach, FL.
11/18/19	City Invincible	Spiezle Architectural Group, Inc.	City Invincible provides architectural services. It offers design and cost-effective solutions from project conception through construction. The company was founded by Angelo Alberto in 2016 and is headquartered in Camden, NJ.
11/12/19	Studio951	Shive-Hattery Group, Inc.	Studio951 provides architecture design services. The company is headquartered in Lincoln, NE.
11/11/19	Dow Diversified, Inc.	H2I Group, Inc.	Dow Diversified, Inc. engages in the provision of engineering services. It offers design and installation of laboratory casework and equipment, and project management. The company was founded by Dean Dow in 1981 and is headquartered in Costa Mesa, CA.
11/8/19	Gaudreau, Inc.	EwingCole, Inc.	Gaudreau, Inc. engages in the provision of architectural design and planning services. It specializes in science and technology, academic, and corporate facilities design. The company was founded by Lucien E.D Gaudreau in 1927 and is headquartered in Baltimore, MD.
11/7/19	Arie Kohn Architects P.C.	ARCLINE studio LLC	Provides Architectural services
11/7/19	Gould Turner Group PC	Barge Design Solutions, Inc.	Gould Turner Group PC engages in the provision of architectural, planning, and interior design firm services. It specializes in the areas in master planning, planning and programming, feasibility studies, architecture, interior design, and furniture selection and specification. The company was founded by Mike Gould and Steve Turner in 1980 and is headquartered in Nashville, TN.
11/6/19	Timberlake Engineering PC	Custom Engineering, Inc.	Timberlake Engineering PC engages in the provision of engineering services. Its services include HVAC, electrical, lighting, and plumbing engineering; energy efficient designs; and building commissioning services. The company was founded by Mark Timberlake in 1999 and is headquartered in Columbia, MO.
11/2/19	Macdonald Land Surveying & Engineering DPC	Tolman Engineering Architecture & Surveying PLLC	Macdonald Land Surveying & Engineering DPC engages in the provision of engineering, architecture, and surveying consulting services. The company is headquartered in Webster, NY.
10/21/19	The AEGIS Technologies Group, Inc.	Arlington Capital Partners LLC	{match score: 02} AEGIS Technologies Group, Inc. provides modeling and simulation supporting products and services. The firm offers directed energy targets and instrumentation, three-dimensional models and content, system development and integration, systems engineering and analysis, test and evaluation, and virtual training systems. The company was founded by William F. Waite and Steven S. Hill in 1989 and is headquartered in Huntsville, AL.

# Median EBITDA Multiples Trend

## Average Number of Months to Close Deals

2017	2018
8.7	9.3

## Breakdown of Cash at Close

	2017		2018	
	<i>Low</i>	<i>High</i>	<i>Low</i>	<i>High</i>
Cash*	82%	86%	78%	85%
Seller Financing	10%	17%	10%	11%
Earn Out	0%	4%	1%	3%
Retained Equity	0%	4%	0%	4%

\* Combination of buyers equity and senior debt

## Advisor, Investor, and Executive Surveys

- 79% expect increased average number of deals in 2019 (up from 70% a year ago)
- 83% expect strong market to expire within the next 24 months (33% say its within 12)
- 19% of transactions valued below \$2M were business services – highest proportion
- 27% of transactions valued above \$2M were in manufacturing – highest proportion
- 66% of investors/buyers use adjusted EBITDA multiple when valuing privately-held businesses
- Top 3 reasons deals didn't close were valuation gap (36%), unreasonable seller/buyer demand (20%) and no market for business (11%)

EBITDA	Manufacturing	Construction & Engineering	Consumer Goods & Services	Wholesale & Distribution	Business Services	Basic Materials & Energy	Healthcare & Biotech	Information Technology	Financial Services	Media & Entertainment	Average
< \$1M	5.0x	3.5x	4.3x	5.5x	3.0x	5.0x	4.3x	7.0x	5.5x	4.0x	4.7x
\$1M - \$5M	5.5x	4.5x	5.5x	5.5x	4.8x	5.5x	5.5x	7.5x	6.0x	5.5x	5.6x
\$5M - \$10M	6.5x	5.0x	5.8x	5.8x	5.3x	6.0x	7.3x	8.0x	7.5x	6.0x	6.3x
\$10M - \$25M	7.5x	6.5x	6.5x	7.5x	6.0x	6.0x	7.5x	8.5x	7.8x	6.5x	7.0x

Sources: Pepperdine Private Capital Markets Report, PitchBook Data, GF Data M&A Report November 2018, Market Pulse