



**February 2019**

Architecture & Engineering  
**INDUSTRY PROFILE**

for Arapahoe & Douglas Counties  
Colorado WIOA Central Planning Region



Colorado Central Planning Region

Arapahoe/Douglas  
WORKFORCE BOARD  
C O L O R A D O

# ARCHITECTURE & ENGINEERING Background

Geography in this profile is Colorado's urban front range. It includes Adams, Arapahoe, Boulder, Broomfield, Clear Creek, Denver, Douglas, El Paso, Gilpin, Jefferson, Larimer and Teller counties. This region includes the metropolitan areas of Fort Collins, Boulder, Denver and Colorado Springs. The 12 counties that make up the region have a combined labor force of 2,297,348, which is over 75% of Colorado's total labor force. The region is home to 145,953 business establishments. Weld County and the Greeley metro area are excluded from this report.

In Colorado's Workforce Development System, this region is known as the 'Colorado Central Planning Region.'

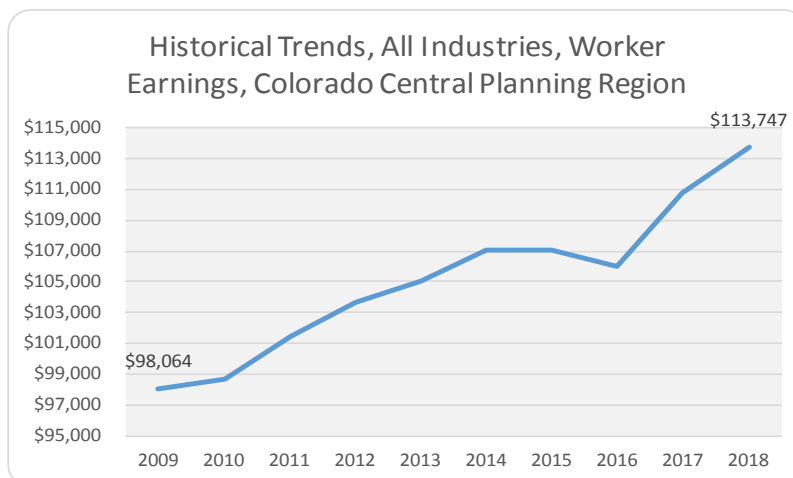
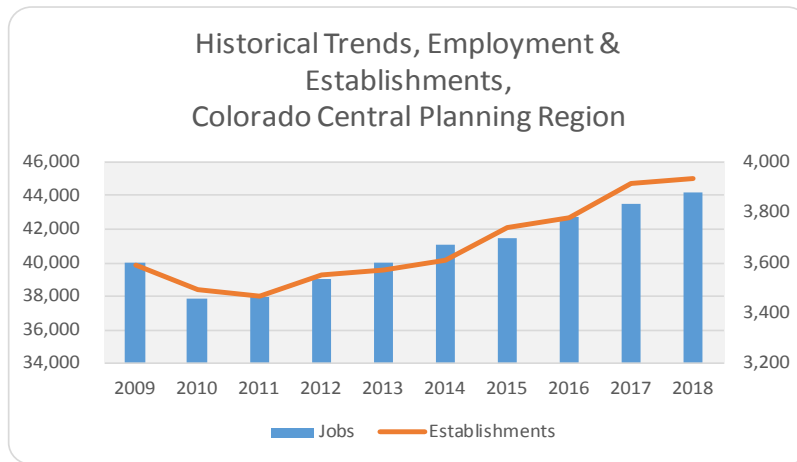
The architecture and engineering sector employs 39,749 people, which is 1.9% of total employment in the Colorado Central Planning Region. In 2018, 3,937 companies in the region had total sales of \$5.4 billion, and the sector contributed 3.4% to the Gross Regional Product.

In the Colorado Central Planning Region, architecture and engineering services added 4,214 jobs between 2009 and 2018, a 1.3% annual growth rate.

Industries within the sector that added the most jobs between 2009 and 2018 were engineering services, which added 1,760 jobs, and architectural services, which added 859 jobs.

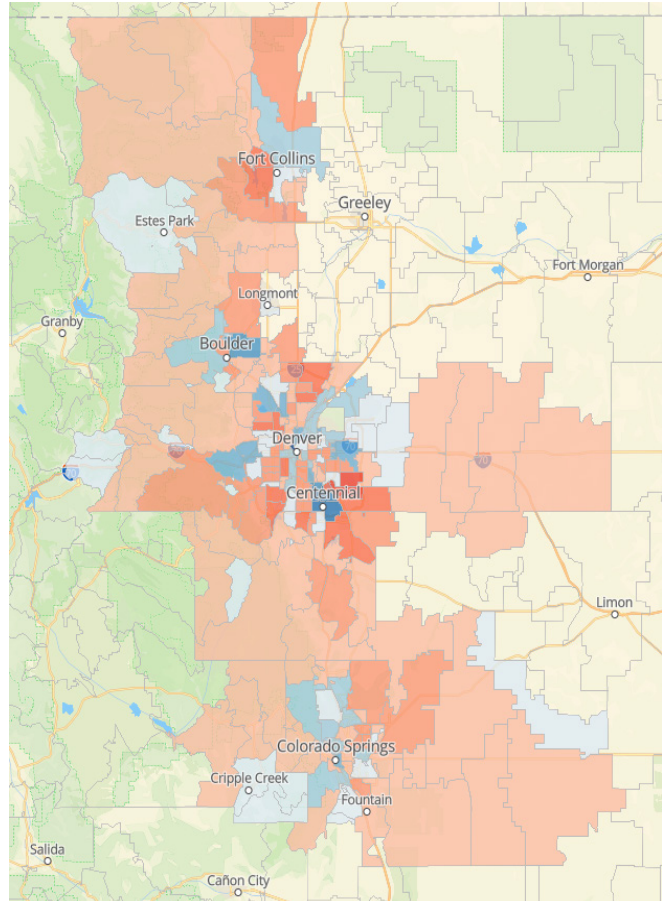
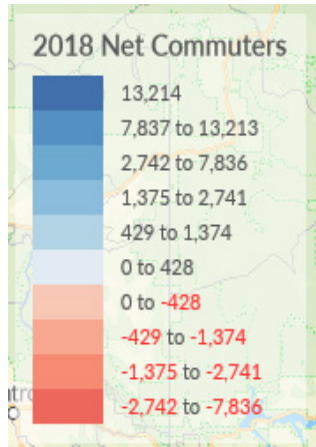
The architecture and engineering sector is expected to add 3,942 jobs through 2024, a 2.2% annual growth rate.

## Historical Trends



# ARCHITECTURE & ENGINEERING Commute Patterns

This map shows the commute patterns of the architecture and engineering industry, within the Colorado Central Planning Region, by zip code.



## Highest In-Commutes

Zip Code-City/County	Net Commute	Resident Workers	Jobs
80202-Denver	13,214	1,206	14,420
80112-Englewood	8,194	2,329	10,523
80111-Englewood	7,837	2,223	10,060
80301-Boulder	3,884	2,396	6,280
80309-Boulder	3,855	0	3,855

## Highest Out-Commutes

Zip Code-City/County	Net Commute	Resident Workers	Jobs
80013-Aurora	(3,569)	4,369	800
80015-Aurora	(3,317)	4,284	967
80134-Parker	(2,298)	4,117	1,819
80016-Aurora	(2,255)	3,228	973
80526-Fort Collins	(1,963)	2,972	1,009



# ARCHITECTURE & ENGINEERING

This table shows employment within the Colorado Central Planning Region in the top 20 occupations in the sector. Regional wage ranges and the median wage are shown, with yellowed cells indicating where wage offers may have to fall to attract and retain qualified candidates based on labor supply (applicants per job opening).

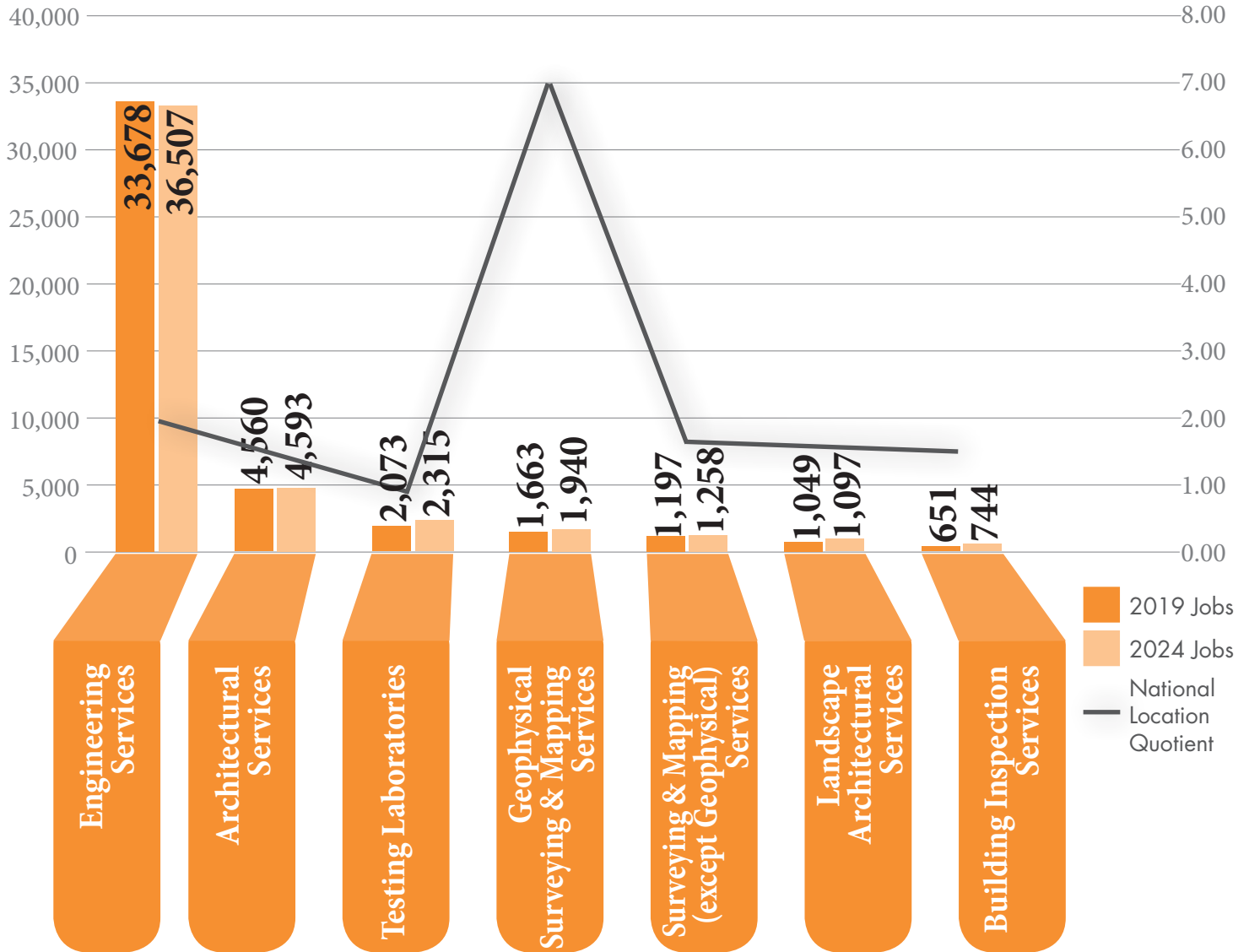
# Competitive Wage Analysis

Due to the timeframes in which wage data is collected and collated, Colorado's 2019 change in minimum wage to \$11.10 per hour may not be accurately reflected in some of the wages listed in the table.

SOC Code	Description	Total Number Jobs (in industry)	Total Number Jobs (across industries)	Annual Openings	Available Applicants	Applicants Per Job Opening	Average Wage	10th Percentile Wage	25th Percentile Wage	Median Wage	75th Percentile Wage	90th Percentile Wage
43-9061	Office Clerks, General	672	43,621	5,935	1,699	3.43	\$19.04	\$10.90	\$13.70	\$17.68	\$22.89	\$29.18
47-4011	Construction & Building Inspectors	883	1,972	260	77	3.55	\$29.77	\$18.81	\$22.82	\$28.59	\$36.21	\$43.77
17-3031	Surveying & Mapping Technicians	1,469	2,080	261	81	3.73	\$24.42	\$16.10	\$18.81	\$23.04	\$28.85	\$35.79
43-6014	Secretaries & Admin Assistants, Except Legal, Medical & Executive	935	39,800	4,644	1,550	4.00	\$18.39	\$11.54	\$14.45	\$17.79	\$22.03	\$26.45
17-3022	Civil Engineering Technicians	744	1,156	130	45	4.16	\$24.47	\$14.22	\$16.62	\$22.73	\$30.40	\$36.49
19-2042	Geoscientists, Except Hydrologists & Geographers	656	1,862	207	73	4.21	\$57.24	\$24.55	\$33.24	\$47.49	\$69.95	\$97.92
13-2011	Accountants & Auditors	602	34,209	3,721	1,332	4.30	\$38.01	\$21.44	\$26.17	\$33.43	\$44.70	\$58.58
17-3011	Architectural & Civil Drafters	1,951	2,380	257	93	4.32	\$27.87	\$17.13	\$21.14	\$26.75	\$33.17	\$40.15
13-1199	Business Operations Specialists, All Other	1,068	37,753	3,934	1,470	4.48	\$38.71	\$20.94	\$26.99	\$36.27	\$47.26	\$59.93
11-1021	General & Operations Managers	873	36,443	3,790	1,419	4.49	\$64.70	\$22.81	\$33.66	\$53.78	\$84.73	\$121.44
17-1022	Surveyors	1,048	1,335	124	52	5.03	\$29.00	\$17.65	\$22.40	\$27.70	\$34.79	\$43.14
17-2051	Civil Engineers	6,325	9,272	838	361	5.17	\$42.18	\$25.52	\$30.50	\$38.86	\$50.40	\$62.96
17-1011	Architects, Except Landscape & Naval	3,243	3,620	321	141	5.26	\$32.32	\$20.41	\$24.50	\$29.57	\$37.82	\$49.02
11-9041	Architectural & Engineering Managers	1,204	3,324	289	129	5.38	\$81.30	\$53.72	\$62.84	\$76.29	\$92.59	\$126.52
17-2071	Electrical Engineers	1,210	3,477	288	135	5.64	\$45.32	\$26.03	\$33.91	\$43.39	\$55.79	\$68.60
17-2141	Mechanical Engineers	1,753	4,931	408	192	5.65	\$49.75	\$28.72	\$34.61	\$43.98	\$57.89	\$77.53
17-2081	Environmental Engineers	669	1,652	135	64	5.74	\$48.56	\$28.54	\$34.41	\$45.52	\$58.24	\$74.34
15-1133	Software Developers, Systems Software	836	13,836	1,113	539	5.81	\$58.08	\$37.48	\$44.29	\$54.55	\$66.43	\$80.14
17-2199	Engineers, All Other	617	2,993	235	117	5.95	\$50.12	\$32.32	\$38.32	\$48.30	\$61.65	\$74.54
17-2072	Electronics Engineers, Except Computer	794	6,132	430	239	6.67	\$48.92	\$31.29	\$36.32	\$46.12	\$60.26	\$73.70

# ARCHITECTURE & ENGINEERING Industry Growth

This table shows projected yearly job growth through 2024. The National Location Quotient shows the relative concentration of employment in this industry in the Colorado Central Planning Region versus the national average. For example, with a Location Quotient of 3.75, you would read, "employment is 3.75 times more concentrated in the Colorado Central Planning Region than the national average."



# ARCHITECTURE & ENGINEERING Difficulty to Hire

This chart shows the relationship between the number of job listings versus the number of hires for each of the top occupations in the sector.

If there are more listings than hires, it suggests that there are not enough qualified people to fill all the jobs.

If there are more hires than listings, it suggests there may be too many qualified people to fill too few jobs.

**Difficulty to Hire** ● Very Easy ● Easy ● Medium ● Difficult ● Very Difficult

Occupation (SOC)	Avg Monthly Postings	Avg Monthly Hires	Hires Per Listing
● Office Clerks, General	331	2,760	8.35
● Geoscientists, Except Hydrologists & Geographers	28	73	2.61
● Surveying & Mapping Technicians	38	76	2.04
● Secretaries & Administrative Assistants, Except Legal, Medical & Executive	1,367	2,362	1.73
● Business Operations Specialists, All Other	1,408	1,907	1.35
● General & Operations Managers	1,844	2,304	1.25
● Architects, Except Landscape & Naval	121	119	0.99
● Engineers, All Other	130	122	0.94
● Construction & Building Inspectors	104	77	0.74
● Surveyors	69	50	0.72
● Accountants & Auditors	2,782	1,758	0.63
● Architectural & Civil Drafters	159	89	0.56
● Environmental Engineers	153	73	0.48
● Civil Engineering Technicians	96	42	0.44
● Electronics Engineers, Except Computer	545	218	0.40
● Software Developers, Systems Software	1,346	528	0.39
● Civil Engineers	1,201	362	0.30
● Mechanical Engineers	1,079	201	0.19
● Architectural & Engineering Managers	899	116	0.13
● Electrical Engineers	1,030	117	0.11

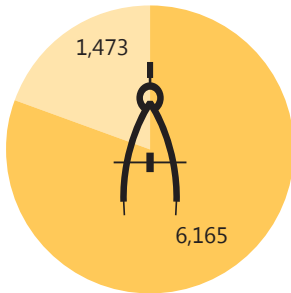
# ARCHITECTURE & ENGINEERING Top Jobs

## Top Ten Occupations Currently Listed in the Colorado Central Planning Region

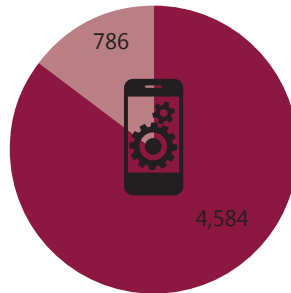
Total Postings (Jan 2018-Dec 2018)



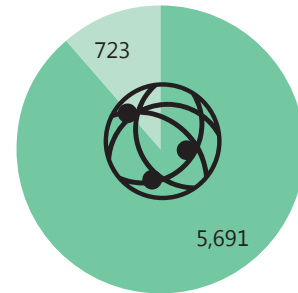
Unique Postings (Jan 2018-Dec 2018)



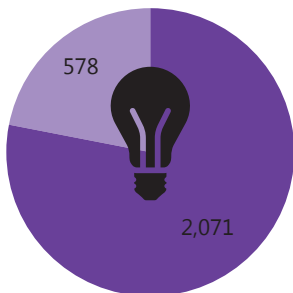
**Civil Engineers**  
Median Posting  
Duration: 40 days



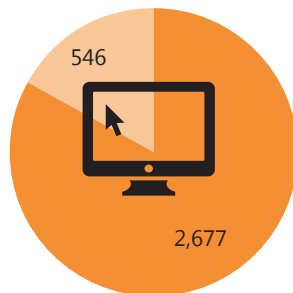
**Software Developers,  
Applications**  
Median Posting  
Duration: 32 days



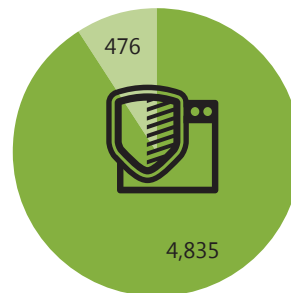
**Networking &  
Computer Systems  
Administrators**  
Median Posting  
Duration: 41 days



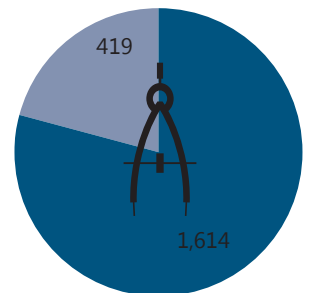
**Electrical Engineers**  
Median Posting  
Duration: 40 days



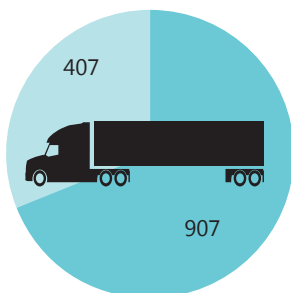
**Computer  
Occupations, All Other**  
Median Posting  
Duration: 35 days



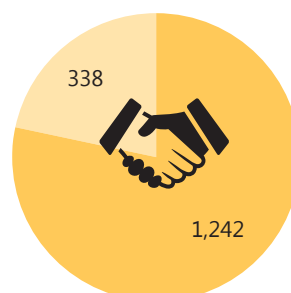
**Information Security  
Analyst**  
Median Posting  
Duration: 43 days



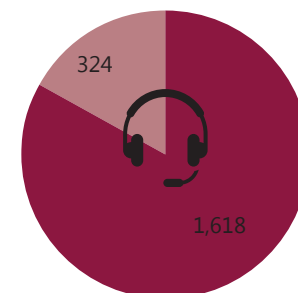
**Mechanical Engineers**  
Median Posting  
Duration: 36 days



**Heavy & Tractor-  
Trailer Truck Drivers**  
Median Posting  
Duration: 22 days



**Architectural &  
Engineering Managers**  
Median Posting  
Duration: 36 days



**Computer User  
Support Specialist**  
Median Posting  
Duration: 37 days



# ARCHITECTURE & ENGINEERING Talent Pipeline

Here are the top 20 jobs in the industry, by number employed and educational attainment level.

SOC Code	Description	2019 Jobs	Annual Openings	Regional Completions	Surplus (Shortfall)	Typical Entry Level Education
11-1021	General & Operations Managers	35,341	3,790	9,018	5,228	Bachelor's Degree
11-9041	Architectural & Engineering Managers	3,245	289	4,462	4,173	Bachelor's Degree
13-1199	Business Operations Specialists, All Other	37,011	3,934	47	(3,887)	Bachelor's Degree
13-2011	Accountants & Auditors	33,277	3,721	1,466	(2,255)	Bachelor's Degree
15-1132	Software Developers, Systems Software	13,495	1,113	2,242	1,129	Bachelor's Degree
17-1011	Architects, Except Landscape & Naval	3,527	321	213	(108)	Bachelor's Degree
17-1022	Surveyors	1,299	124	0	(124)	Bachelor's Degree
17-2051	Civil Engineers	9,064	838	500	(338)	Bachelor's Degree
17-2071	Electrical Engineers	3,392	288	519	231	Bachelor's Degree
17-2072	Electronics Engineers, Except Computer	6,080	430	609	167	Bachelor's Degree
17-2081	Environmental Engineers	1,614	135	111	(24)	Bachelor's Degree
17-2141	Mechanical Engineers	4,803	408	1,096	688	Bachelor's Degree
17-2199	Engineers, All Other	2,935	235	736	501	Bachelor's Degree
17-3011	Architectural & Civil Drafters	2,310	257	386	129	Associate's Degree
17-3022	Civil Engineering Technicians	1,121	130	243	113	Associate's Degree
17-3022	Surveying & Mapping Technicians	2,030	261	196	(65)	HS Diploma or Equivalent
19-2042	Geoscientists, Except Hydrologists & Geographers	1,818	207	169	(38)	Bachelor's Degree
43-6014	Secretaries & Administrative Assistants, Except Legal, Medical, & Executive	39,185	4,644	32	(4,612)	HS Diploma or Equivalent
43-9061	Office Clerks, General	42,531	5,935	0	(5,935)	HS Diploma or Equivalent
47-4011	Construction & Building Inspectors	1,916	260	0	(260)	HS Diploma or Equivalent



# ARCHITECTURE & ENGINEERING Top Five

This table shows the top in-demand skills and industry-recognized certifications. Skills are divided into 'workplace skills,' which are technical and job specific, and 'core skills,' which are general and apply across all industries. In addition, the following shows the sources of listings.

## Essential Skills

- 1 Management
- 2 Communications
- 3 Operations
- 4 Infrastructure
- 5 Innovation

## Certifications

- 1 Professional Engineer
- 2 CompTIA Security+
- 3 Licensed Professional Engineer
- 4 CISSP
- 5 Systems Security Certified Practitioner

## Workplace Skills

- 1 Systems Engineering
- 2 SCI Clearance
- 3 Civil Engineering
- 4 TS/SCI Clearance
- 5 AutoCAD

## Companies

- 1 General Dynamics Corporation
- 2 Jacobs Engineering Group Inc.
- 3 Ascent LLC.
- 4 Aecom
- 5 Stantec Inc.

## SOURCE OF LISTINGS

- 1 Nexxt.com
- 2 My.jobs
- 3 Thejobsnetwork.com
- 4 Employmentcrossing.com
- 5 Jobs.net

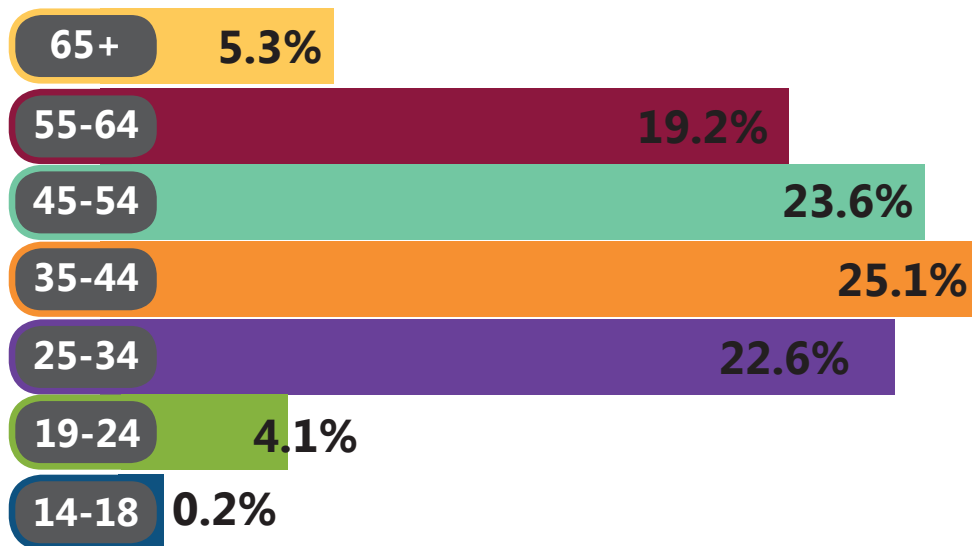


# ARCHITECTURE & ENGINEERING Age Bands & Volume

## Age Bands



It is helpful to know the age bands in a sector, because if there is a substantial percentage of people above 55 years old, it means there will be opportunity as retirements happen.

Based on Age Distribution, Arapahoe/Douglas Works! has developed a way to measure the 'age gap' in an industry by comparing the number of workers over age 45 to the number under age 34. Age gap is shown both as a percentage and a count.



## Annual Change

Entering Labor Force	592
Vacancies (Attrition + Growth)	1,062
Annual Surplus/Shortfall	(470)

Arapahoe/Douglas  
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