0201.00 - Architecture and Architectural Technology

Architectural Drafting and Design

September 2018

Research Summary

The Los Angeles/Orange County Center of Excellence (COE) compiled this report to provide regional labor market supply and demand data related to **architecture and architectural technology**.

The following list summarizes key findings from this data brief:

- Nearly 550 job openings will be available each year between 2017-2022 due to replacement need (e.g. retirements).

- The average entry-level hourly wage for architectural and civil drafters is **above** the MIT Living Wage estimate for the regions.

- Of the job postings that included a minimum educational requirement, 53% listed a Bachelor's degree. Nearly two-thirds (62%) of the current workforce has some postsecondary coursework and/or training.

- Between 2014 and 2017, community colleges in the county conferred an average of **258 awards** (associate degrees and certificates) in a related training program.

Occupation Codes and Descriptions

Currently, there is one occupation in the standard occupational classification (SOC) system related to architecture and architectural technology. The occupation title, description, and reported job titles are included in Exhibit 1.

Exhibit 1 – Occupation, description, and sample job titles

SOC Code	Title	Description	Sample of Reported Job Titles
17-3011	Architectural and Civil Drafters	Prepare detailed drawings of architectural and structural features of buildings or drawings and topographical relief maps used in civil engineering projects, such as highways, bridges, and public works. Use knowledge of building materials, engineering practices, and mathematics to complete drawings.	**17-3011.01 - Architectural Drafters:** Architect, Architectural Designer, Architectural Drafter, Architectural Draftsman, Architectural Intern, CAD Technician (Computer-Aided Design Technician), Drafter, Draftsman, Intern Architect, Project Manager **17-3011.02 - Civil Drafters:** Civil CAD Designer (Civil Computer Aided Design Designer), Civil CAD Tech (Civil Computer-Aided Design Technician), Civil Drafter, Computer-Aided Design Designer (CAD Designer), Computer-Aided Design Operator (CAD Operator), Computer-Aided Design Technician (CAD Technician), Computer-Aided Drafting and Design Drafter (CADD Drafter), Drafting Technician, Draftsman, Draftsperson

Source: O*NET Online

Current and Future Employment

In Los Angeles and Orange Counties, the number of jobs for architectural and civil drafter is expected to increase slightly by 1% over the next five years. Nearly 550 job opportunities will be available annually for this occupation through 2022 due to new job growth and/or replacement need (e.g., retirements). Exhibit 2 contains detailed employment projections data for the occupation.

Exhibit 2 – Five-year projections for architectural and civil drafters

SOC	Occupation	2017 Jobs	2022 Jobs	2017 - 2022 Change	2017 - 2022 % Change	Annual Openings
17-3011	Architectural and Civil Drafters	6,198	6,271	73	1%	545

Source: EMSI 2018.2 – QCEW, non-QCEW, Self-Employed

Earnings

In Los Angeles and Orange Counties, the entry-level average wage for architectural and civil drafters is $18.62 per hour, which is above the MIT Living Wage[1] estimates of $13.54 and $15.31 per hour for a single adult in the regions. The average annual earnings for architectural and civil drafters in the regions is $60,430 per year, assuming full-time employment.

Exhibit 3 contains hourly wages and annual average earnings for the occupation studied in this report. Entry-level hourly earnings is represented by the 10th percentile of wages, median hourly earnings is represented by the 50th percentile of wages, and experienced hourly earnings is represented by the 90th percentile of wages, demonstrating various levels of employment.

Exhibit 3 – Earnings for architectural and civil drafters

SOC	Occupation	Entry-Level Hourly Earnings	Median Hourly Earnings	Experienced Hourly Earnings	Average Annual Earnings
17-3011	Architectural and Civil Drafters	$18.62	$27.90	$40.74	$60,430

Source: EMSI 2018.2 – QCEW, non-QCEW, Self-Employed.

Employer Job Postings

In this research brief, real-time labor market information is used to provide a more nuanced view of the current job market, as it captures job advertisements for occupations relevant to the field of study. Employer job postings are consulted to understand who is employing architecture and architectural technology workers, and what they are looking for in potential candidates. To identify job postings related to architecture, the following occupation was used: architectural and civil drafters (17-3011).

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[1] MIT Living Wage Calculator. http://livingwage.mit.edu/

Top Titles

The most common titles for architecture and architectural technology-related jobs are listed in Exhibit 4. CAD drafter was mentioned in 22% of all relevant job postings (61 out of 275 postings).

Exhibit 4 –Job titles (n=275)

Title	Job Postings, Last 12 Months
CAD Drafter	61
Plumbing Designer	20
Structural Designer	20
AutoCAD Drafter	18
Civil Designer	12
Draftsman	11
Structural Revit Designer	8

Source: Labor Insight/Jobs (Burning Glass)

Top Employers

Exhibit 5 lists the major employers hiring architecture workers. Top employers postings job ads included AMPAM Parks Mechanical Incorporated, KHS Contractors, and LPA Incorporated. The top worksite cities in the region for these occupations were Los Angeles, Irvine, Pasadena, Anaheim, and Santa Ana.
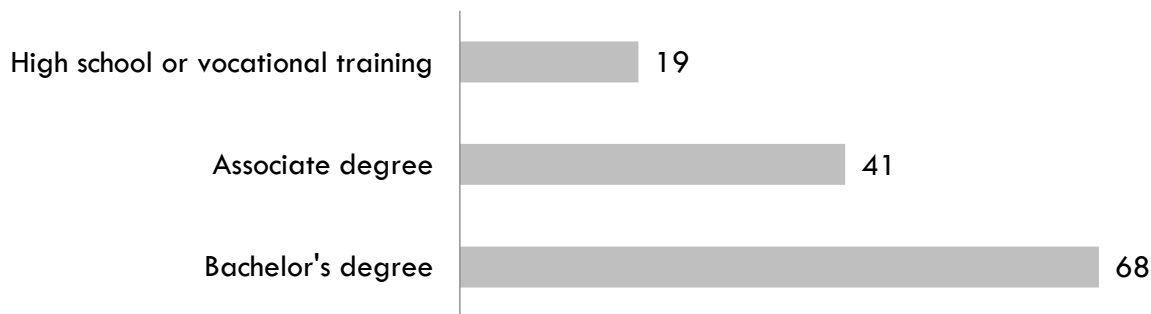
Exhibit 5 – Top employers (n=187)

Employer	Job Postings, Last 12 Months
AMPAM Parks Mechanical Incorporated	5
KHS Contractors	5
LPA Incorporated	5
Jacobs Engineering Group Incorporated	4
AECOM Technology Corporation	3
D R Consultants & Designers, Inc	3
Greenberg Farrow	3
Kimley-Horn and Associates	3
NES Global Talent	3
Pace Advanced Water Engineering	3

Source: Labor Insight/Jobs (Burning Glass)

Advertised Education Levels

Exhibit 6 displays the education level requested by employers in online job ads. The majority of employers were looking for a candidate with a Bachelor's degree. Approximately 53% of job postings did not specify a level of education.

Exhibit 6 – Advertised education requirements for architectural and civil drafters (n=128)

High school or vocational training	19
Associate degree	41
Bachelor's degree	68

Source: Labor Insight/Jobs (Burning Glass)

Education and Training

Exhibit 7 shows the typical entry-level education requirement for the occupation of interest, along with the typical on-the-job training, and percentage of workers in the field who hold a community college award or have completed some postsecondary courses. About 62% of the workforce has completed some community college education as their highest level of education.

Exhibit 7 – Education and training requirements

SOC	Occupation	Typical entry-level education	Typical on-the-job training	% of Community College Award Holders or Some Postsecondary Coursework
17-3011	Architectural and Civil Drafters	Associate degree	None	62%

Source: EMSI, Bureau of Labor Statistics Employment Projections (Educational Attainment)

In Los Angeles and Orange Counties, 18 community colleges have conferred awards in programs that train students for the occupation of interest. Between 2014 and 2017, there was an average of 258 community college awards conferred annually across the two programs listed in Exhibit 8. It is important to note that an award is not equivalent to a single person in search of a job opening, since a student may earn more than one award (e.g. an associate degree and a certificate).

Exhibit 8 – CCC Student Awards (by TOP and College)

TOP Code	Program	College	2014-15 Awards	2015-16 Awards	2016-2017 Awards	3-Year Award Average
0201.00	Architecture and Architectural Technology	Cerritos	12	16	20	16
		Compton	N/A	2	N/A	2
		East LA	41	103	25	56
		El Camino	21	18	19	19
		Fullerton	7	8	9	8
		Glendale	4	4	3	4
		LA Harbor	7	14	9	10
		LA Pierce	7	7	2	5
		LA Trade	7	8	6	7
		LA Valley	N/A	3	2	3
		Long Beach	12	6	12	10
		Mt San Antonio	19	19	67	35
		Orange Coast	58	34	43	45
		Pasadena	N/A	7	5	6
		Rio Hondo	16	17	13	15
		Saddleback	5	6	14	8
		Subtotal/Average	**216**	**272**	**249**	**246**
0953.10	Architectural Drafting	Citrus	1	N/A	1	1
		Long Beach	2	4	12	6
		Santa Ana	14	1	3	6
		Subtotal/Average	**17**	**5**	**16**	**13**
		Total	**233**	**277**	**265**	**258**

Source: California Community Colleges Chancellor's Office MIS Data Mart

Student Outcomes

The CTE LaunchBoard provides student outcome data on the effectiveness of CTE programs. The following student outcome information was collected from exiters of the Architecture and Architectural Technology Taxonomy of Program (TOP) code (0201.00) in Los Angeles and Orange Counties for the 2015-16 academic year.

- Median earnings in the second fiscal quarter after program completion is $10,175
- 49% of students are earning a living wage
- 63% of students are employed within six months after completing a program

The following student outcome information was collected from exiters of the Architectural Drafting Taxonomy of Program (TOP) code (0953.10) in Los Angeles County for the 2015-16 academic year.

- Median earnings in the second fiscal quarter after program completion is $12,432
- 55% of students are earning a living wage
- 61% of students are employed within six months after completing a program

Source: CTE LaunchBoard

Sources

O*Net Online, Labor Insight/Jobs (Burning Glass), Economic Modeling Specialists International (EMSI), MIT Living Wage Calculator, Bureau of Labor Statistics (BLS) Education Attainment, California Community Colleges Chancellor's Office Management Information Systems (MIS) Data Mart, CTE LaunchBoard, and Statewide CTE Outcomes Survey

Notes

Data included in this analysis represents the labor market demand for positions most closely related to architecture and architectural technology. Standard occupational classification (SOC) codes were chosen based on the national education level required for employment (associate degree and postsecondary certificate) as well as the proportion of current workers who hold a community college award or have had some community college training. This selection process narrows the labor market analysis to the most relevant employment opportunities for students with community college education and/or training.

Traditional labor market information was used to show current and projected employment based on data trends, as well as annual average awards granted by regional community colleges. Real-time labor market information captures job post advertisements for occupations relevant to the field of study and should not be used to establish current job openings, because the numbers may include duplicate job postings or postings intended to gather a pool of applicants. Real-time labor market information can signal demand and show what employers are looking for in potential employees, but is not a perfect measure of the quantity of open positions.