Architectural and Civil Drafting + Sustainability

Inland Empire/Desert Region (Riverside and San Bernardino counties)

Summary

Architecture and Architectural Technology Community College Program (TOP 0201.00)	→	Provides training for **-Architectural and Civil Drafters (17-3011)** Occupation

Over the next five years (2022-2027), employment for architectural and civil drafters is projected to:

Increase Employment by **10%**	**118** **Annual Job Openings**	Median Hourly Earnings **$29.29**

63 Total Annual Awards
in architecture and architectural technology and related programs

63 Program Awards from Community College Programs	**0** Program Awards from Other Postsecondary Education Providers

The Inland Empire/Desert Centers of Excellence

👍 **Recommends**

architecture and architectural technology and related programs to meet the need for more workers in the region

Introduction

California Community College architecture and architectural technology (TOP 0201.00) programs prepare students for employment through the instruction of planning, organization, and enclosure of space for functional and esthetic purposes, including the design of structures, testing of materials, estimating, environmental impact studies, and dealing with contracts and specifications (Taxonomy of Programs, 2023). The knowledge, skills, and abilities trained by architecture and architectural technology programs lead to employment as:

- Architectural and Civil Drafters (SOC 17-3011)

Job Demand

In 2022, there were 842 jobs for architectural and civil drafters in the Inland Empire/Desert Region. Regional employment for architectural and civil drafters is projected to increase by 10% through 2027. More than 100 job openings are projected annually. Exhibit 1 displays the job counts, five-year projected job growth, and job openings in the region.

Exhibit 1. Five-year projections for architectural and civil drafters, Inland Empire/Desert Region, 2022-2027

Occupation	2022 Jobs	2027 Jobs	5-Yr % Change	5-Yr Openings (New + Replacement Jobs)	Annual Openings (New + Replacement Jobs)
Architectural and Civil Drafters	842	925	10%	590	118
Total	**842**	**925**	**10%**	**590**	**118**

Source: Lightcast 2023.3

An online job ad search for architectural and civil drafters was conducted to reveal the employers seeking these workers, including the median posting duration, earnings information, and in-demand skills. Exhibit 2 displays the number of job ads posted for architectural and civil drafters over the last 12 months and the median posting duration. Over the previous 12 months, there were 101 job ads for architectural and civil drafters in the region. **Of the 101 job ads, 33 included the term "sustain" in the job description.**

Exhibit 2. Job ads and posting duration, Inland Empire/Desert Region, January through December 2023
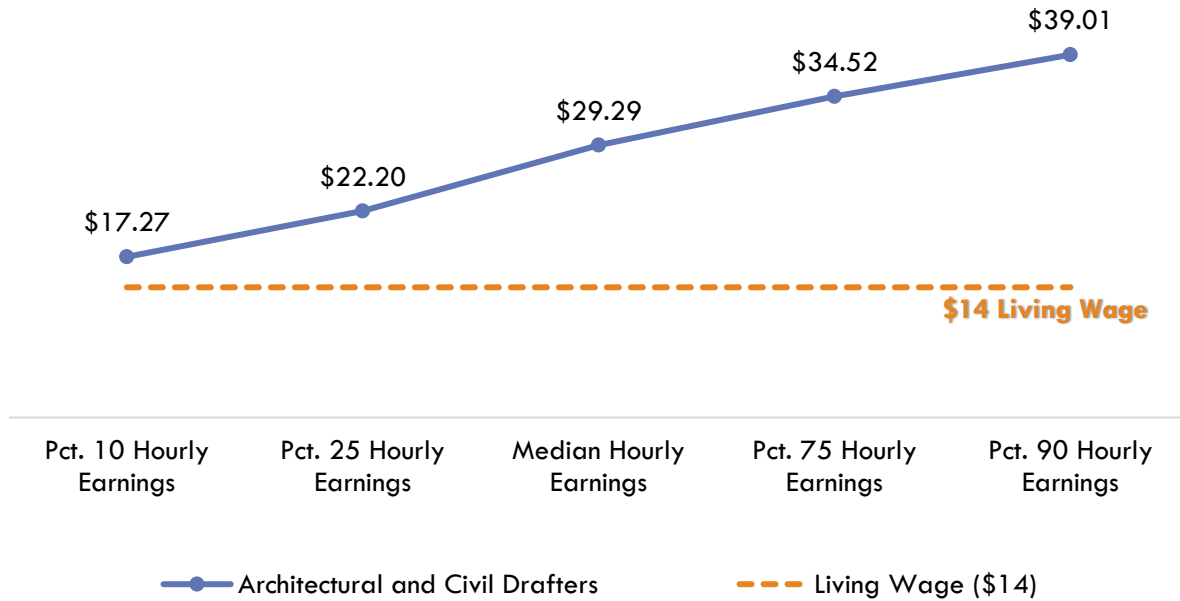
Occupation	Job Ads	Median Posting Duration (Days)
Architectural and Civil Drafters	101	28 days
Total	**101**	--

Source: Lightcast 2023.3

Earnings

The living wage for one adult in the Inland Empire (Riverside and San Bernardino) is $14 per hour or $29,120 annually. Exhibit 3 displays the hourly earnings for architectural and civil drafters. Notably, all five hourly wages are above the regional living wage estimate.

Exhibit 3. Hourly earnings by percentile for architectural and civil drafters, Inland Empire/Desert Region, 2022
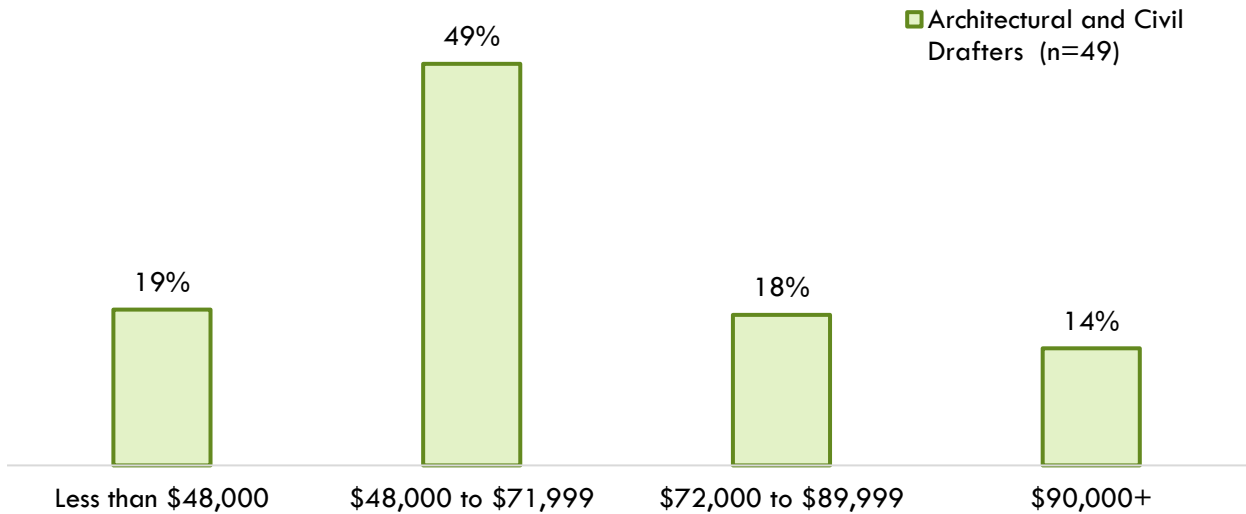

Source: Lightcast 2023.3

Advertised Salary from Online Job Ads

Exhibit 4 displays the regional online advertised salaries for architectural and civil drafters over the last 12 months. Online job ads salary information reveals that most employers (49%) advertise an annual salary between $48,000 and $71,999.

Exhibit 4. Online advertised salaries for architectural and civil drafters, Inland Empire/Desert Region, January through December 2023

Legend: □ Architectural and Civil Drafters (n=49)

- Less than $48,000: 19%
- $48,000 to $71,999: 49%
- $72,000 to $89,999: 18%
- $90,000+: 14%

Source: Lightcast 2023.3

Online Job Advertisements: Job Titles, Employers, Skills, Education, & Work Experience

Exhibit 5 displays the job titles most frequently used in relevant job ads over the last 12 months. Displaying advertised job titles may provide insight into the types of positions sought by employers.

Exhibit 5. Job titles most frequently used in job ads, Inland Empire/Desert Region, January through December 2023

Job Titles	Unique Job Ads
Drafters	29
Civil Designers	24
CAD Drafters	20
Structural Designers	15
Plumbing Drafters	13

Source: Lightcast 2023.3

Exhibit 6 displays the employers posting the most job ads for architectural and civil drafters during the last 12 months. Showing employer names provides insight into where students may find employment after completing a program. Actalent posted the most job ads for architectural and civil drafters over the last 12 months.

Exhibit 6. Employers posting the most job ads for architectural and civil drafters, Inland Empire/Desert Region, January through December 2023

Top Employer	Unique Job Ads
Actalent	19
NP Mechanical, Inc., Rice Services	15
Core States Group	14
Westland Group	12
Kimley-Horn	10

Source: Lightcast 2023.3

Exhibit 7 lists a sample of specialized and employability skills employers seek when seeking workers to fill relevant positions. Specialized skills are occupation-specific skills that employers request for industry or job competency. Common skills are foundational skills that transcend industries and occupations; this category is often referred to as "soft skills." The skills requested in job ads may be utilized to guide curriculum development.
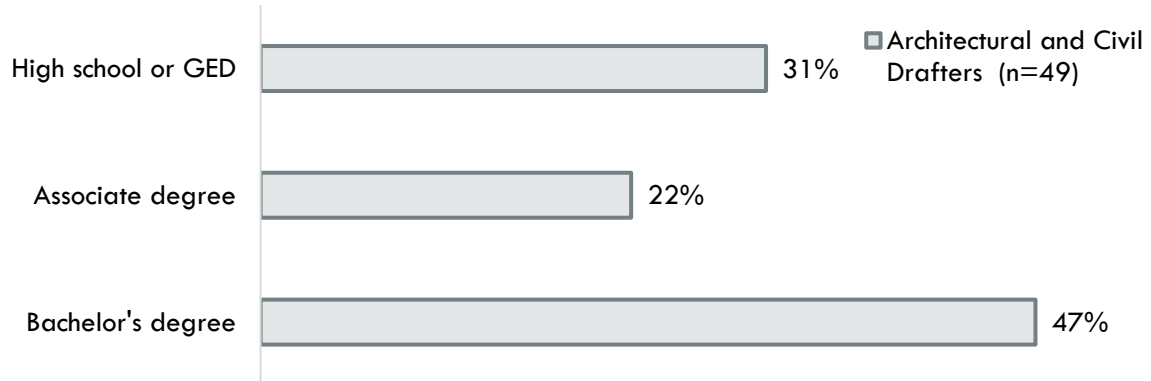
Exhibit 7. Sample of in-demand skills from employer job ads, Inland Empire/Desert Region, January through December 2023

Specialized skills	Common skills
• AutoCAD	• Communications
• Computer-Aided Design	• Detail-Oriented
• Project Management	• Problem-Solving
• Construction	• Self-Motivation
• Autodesk Revit	• Management
• Civil Design/Engineering	• Computer Literacy
• Plumbing	• Mathematics
• AutoCAD Civil 3D	• Writing
• Building Codes	• Quality Control
• Land Development	• Research

Source: Lightcast 2023.3

Exhibit 8 displays the minimum advertised education requirements for architectural and civil drafters. According to the Bureau of Labor Statistics, 58% of incumbent workers hold a community college-level of educational attainment; "some college, no degree," and an "associate degree." Only 50% of employer job ads included minimum education requirements. Notably, 47% of employer job ads sought a candidate holding a bachelor's degree and 31% sought a high school diploma or GED as a minimum education level requirement.
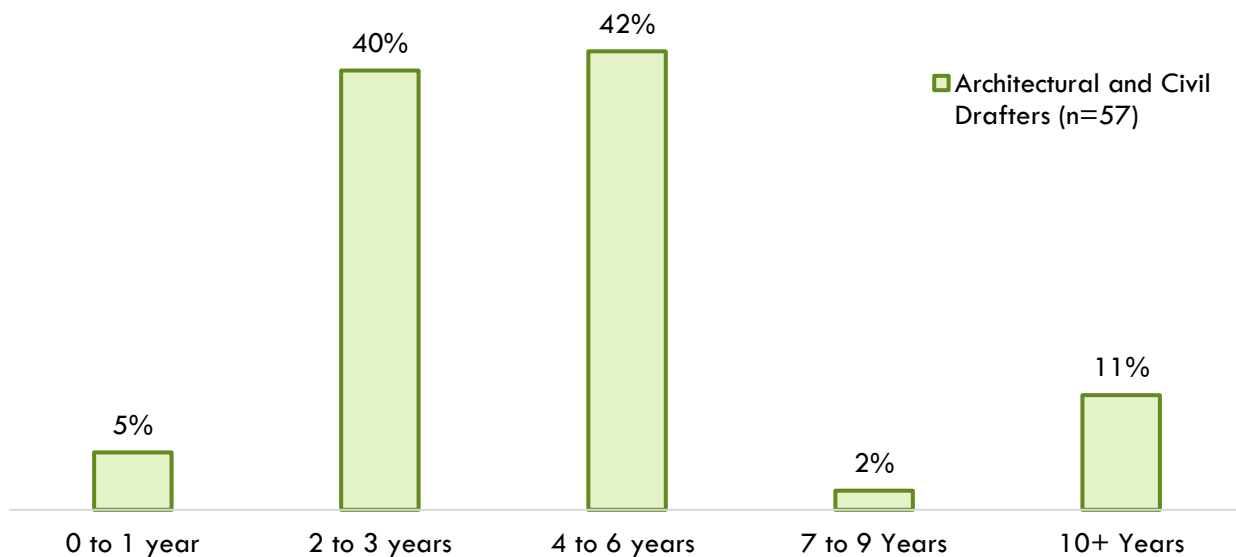
Exhibit 8. Minimum advertised education requirements, Inland Empire/Desert Region, January through December 2023

Source: Lightcast 2023.3

Exhibit 9 displays the work experience typically required from employer job ads for architectural and civil drafters. According to postings, 42% of employers listing minimum experience requirements sought candidates with four to six years of previous work experience.

Exhibit 9. Real-time work experience requirements, Inland Empire/Desert Region, January through December 2023

Source: Lightcast 2023.3

Student Completions and Programs Outcomes

Exhibit 10 displays student completions for Architecture and Architectural Technology (TOP 0201.00), Drafting Technology (TOP 0953.00), and Architectural Drafting (TOP 0953.10) programs over the last three academic years (2019-2022). In the previous three academic years, six regional community colleges issued an average of 63 awards across three programs.

Exhibit 10. Annual average community college awards for relevant programs, Inland Empire/Desert Region, Academic Years 2019-2022

TOP Code	Program	College	2019-20 Awards	2020-21 Awards	2021-22 Awards	3-Year Award Average
0201.00	Architecture and Architectural Technology	Desert	9	5	5	6
		Norco	11	6	4	7
		San Bernardino	5	2	15	7
	Supply Subtotal/Average		**25**	**13**	**24**	**21**
0953.00	Drafting Technology	Desert	-	1	1	1
		Mt. San Jacinto	4	2	6	4
		Norco	25	10	14	16
		Victor Valley	23	11	5	13
	Supply Subtotal/Average		**52**	**24**	**26**	**34**
0953.10	Architectural Drafting	Chaffey	4	5	5	5
		Victor Valley	4	-	7	4
	Supply Subtotal/Average		**8**	**5**	**12**	**8**
	Supply Total/Average		**85**	**42**	**62**	**63**

Source: MIS Data Mart

California program outcome data may provide useful insight into the likelihood of success for the proposed program. Community college student outcome information based on the selected TOP code and region is provided in Exhibit 11.

Exhibit 11. TOP 0201.00 – Architecture and Architectural Technology strong workforce program outcomes, Inland Empire/Desert Region, most recent academic year

Strong Workforce Program Metrics: 0201.00 – Architecture and Architectural Technology	Inland Empire/Desert Region	California
Unduplicated count of enrolled students (2021-22)	449	8,890
Completed 9+ career education units in one year (2021-22)	26%	28%
Students who attained a noncredit workforce milestone in a year (2021-22)	Insufficient data	51%
Students who earned a degree, certificate, or attained apprenticeship (2021-22)	16	300
Job closely related to the field of study (2019-20)	63%	72%
Median annual earnings (all exiters) (2020-21)	$39,052	$40,324
Median change in earnings (all exiters) (2020-21)	58%	31%
Attained a living wage (completers and skills-builders) (2020-21)	66%	53%

Sources: LaunchBoard Community College Pipeline and Strong Workforce Program Metrics

NOTE

No award completion data is available for relevant non-community college institutions.

Summary of Findings & Recommendation

Over the next five years, the occupation – architectural and civil drafters – is projected to have 118 annual job openings and increase employment by 10% in the Inland Empire/Desert Region. Architectural and civil drafters have hourly wages above the regional living wage estimate. Over the last 12 months, there were 101 job ads posted for architectural and civil drafters in the region.

Over the last three academic years, six regional community colleges issued an average of 63 awards across the following three programs: Architecture and Architectural Technology (TOP 0201.00), Drafting Technology (TOP 0953.00), and Architectural Drafting (TOP 0953.10). No non-community college postsecondary education institutions issued awards in relevant programs over the past two years. In total, regional institutions issued an average of 63 awards in relevant training programs.

Based on the 118 annual job openings (demand) and the annual average of 63 awards conferred (supply), there appears to be an undersupply in the region. Due to this, the Centers of Excellence finds that there is a regional need for Architecture and Architectural Technology training programs to meet the regional demand for qualified workers. Colleges considering this program should partner with applicable employers to document their demand for architectural and civil drafters and the skills required for students to earn a living wage after exiting the program.

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Appendix: Methodology

Exhibit 10 displays the average annual California Community College (CCC) awards conferred during the three academic years between 2019 and 2022 from the California Community Colleges Chancellor's Office Management Information Systems (MIS) Data Mart. Awards are the combined total during the timeframe, divided by three in this case to calculate an annual average. This is done to minimize the effect of atypical variations that might be present in a single year.

Community college student outcome information is from LaunchBoard and based on the selected TOP code and region. These metrics are based on records submitted to the California Community Colleges Chancellor's Office Management Information Systems (MIS) by community colleges, which come from self-reported student information from CCC Apply and the National Student Clearinghouse. Employment and earnings metrics are sourced from California's Employment Development Department's Unemployment Insurance database. When available, outcomes for completers are reported to demonstrate the impact that earning a degree or certificate can have on employment and earnings. For more information on the types of students included for each metric, please see the web link for LaunchBoard's Strong Workforce Program Metrics Data Element Dictionary in the References section (LaunchBoard, 2023a). Finally, employment in a job closely related to the field of study comes from self-reported student responses on the CTE Employment Outcomes Survey (CTEOS) administered by Santa Rosa Junior College (LaunchBoard, 2023a).

Table 1. 2022 to 2027 job growth, wages, entry-level education, training, and work experience required for architectural and civil drafters in the Inland Empire/Desert Region (Riverside and San Bernardino Counties combined)

Occupation (SOC)	2022 Jobs	5-Year Change	5-Year % Change	Annual Openings (New + Replacement Jobs)	Entry-Experienced Hourly Wage (10th to 90th percentile)	Median Hourly Wage (50th percentile)	Average Annual Earnings	Entry-Level Education & On-The-Job-Training	Work Experience Required
Architectural and Civil Drafters (17-3011)	842	83	10%	118	$17.27 to $39.01	$29.29	$60,400	Associate degree & None	None
Total	**842**	**83**	**10%**	**118**	-	-	-	-	-

Source: Lightcast 2023.3