










Building Performance and Environmental Design Occupations

Baccalaureate Labor Market Analysis

October 2024

SUMMARY

BDP PROGRAM RECOMMENDATION?	EVIDENCE OF A SUPPLY GAP?	JOB POSTINGS WITH BA/BS OFFER HIGHER WAGES THAN THOSE WITHOUT BA/BS?	EXPECTED EDUCATION FOR OCCUPATIONS ANALYZED
 Proceed with New Program	 	 	Bachelor's Degree
DOES A SIMILAR PROGRAM EXIST AT A UC OR CSU?	EXISTING ASSOCIATE DEGREE PROGRAM IN REGION?	NUMBER OF ANNUAL JOB OPENINGS	OCCUPATIONS PAY LIVING WAGES FOR A...?
YES, a UC or CSU currently offers a similar program	 	 	<input checked="" type="checkbox"/> Single Adult <input type="checkbox"/> Adult with Child

The San Diego & Imperial Center of Excellence (COE) developed this brief to determine if an unmet workforce need exists for a baccalaureate degree program (BDP) for [Building Performance and Environmental Design Occupations](#). According to Assembly Bill No. 927, community college districts seeking approval for a BDP must 1) not offer “program curricula already offered by the California State University or the University of California” systems, 2) “continue to offer an associate degree program in the same academic subject”¹ of the proposed BDP, and 3) “provide evidence of unmet workforce needs.”²

This brief recommends that the San Diego & Imperial Counties Community Colleges proceed with developing a new BDP for [Building Performance and Environmental Design Occupations](#) because **1) a UC or CSU reported having similar programs, but did not have any completions regionally and only 43 statewide, leaving a significant supply gap of 1,925 and 18,934 annual job openings in San Diego County and California, respectively; 2) entry-level wages are above the living wage for a single adult but are insufficient to support an adult with a child; and 3) employers advertise higher salaries in job postings that require a bachelor’s degree than those that do not.**

¹ “The bill would require a community college district to continue to offer an associate degree program in the same academic subject for which a baccalaureate degree program has been approved, unless the community college district has received approval from the chancellor to eliminate the associate degree program, as specified.”

² “AB-927 Public postsecondary education: community colleges: statewide baccalaureate degree.” California Legislative Information. Accessed 09/05/2023. leginfo.ca.gov/faces/billTextClient.xhtml?bill_id=202120220AB927

INTRODUCTION

According to Assembly Bill No. 927, community college districts seeking approval to offer a baccalaureate degree program (BDP) must:³

1. Not offer a BDP or “program curricula already offered by the California State University or the University of California”
2. “Continue to offer an associate degree program in the same academic subject for which a baccalaureate degree program has been approved”
3. Identify and document unmet workforce needs “in the local community or region of the district”

To determine the need for a new BDP, this brief examines labor market information (LMI) for **Building Performance and Environmental Design Occupations** using the following Standard Occupational Classification (SOC)⁴ codes:

- **Business Operations Specialists, All Other** (SOC 13-1199): All business operations specialists not listed separately.
 - **Sustainability Specialist** (SOC 13-1199.05): Address organizational sustainability issues, such as waste stream management, green building practices, and green procurement plans.
- **Construction and Building Inspectors** (SOC 47-4011): Inspect structures using engineering skills to determine structural soundness and compliance with specifications, building codes, and other regulations. Inspections may be general in nature or may be limited to a specific area, such as electrical systems or plumbing.
 - **Energy Auditors** (SOC 47-4011.01): Conduct energy audits of buildings, building systems, or process systems. May also conduct investment grade audits of buildings or systems.

³ “AB-927 Public postsecondary education: community colleges: statewide baccalaureate degree.” California Legislative Information. Accessed 09/05/2023. leginfo.ca.gov/faces/billTextClient.xhtml?bill_id=202120220AB927

⁴ The Standard Occupational Classification (SOC) system is used by federal statistical agencies to classify workers into occupational categories for the purpose of collecting, calculating, or disseminating data. [bls.gov/soc](https://www.bls.gov/soc/).

According to available LMI, employers require that **Construction and Building Inspectors** have a minimum educational attainment of a **high school diploma or equivalent** but also have **at least five years or more of work experience**. **Business Operations Specialists** may have **no work experience** but require a **bachelor's degree**. On average, entry-level hourly earnings for **Building Performance and Environmental Design Occupations** are **\$27.75**, which is above the **\$26.64** per hour living wage for a single adult but below the **\$48.33** per hour living wage for a single adult with a preschool child in San Diego County.⁵

SOC Title (SOC Code)	Entry-Level Hourly Earnings ⁶	Median Hourly Earnings	Typical Entry-Level Education	Work Experience Required
Construction and Building Inspectors (47-4011)	\$28.72	\$39.14	High school diploma or equivalent	5 years or more
Business Operations Specialists, All Other (13-1199)	\$26.79	\$38.12	Bachelor's degree	None
Average	\$27.75	\$38.63		

The following sections “assess the workforce value of [a] proposed baccalaureate degree program” for **Building Performance and Environmental Design Occupations** in accordance with AB-927.⁷

⁵ “Sustainability Calculator (formerly the Family Needs Calculator),” Center for Women’s Welfare, University of Washington, last updated 2024. mavencollaborative.org/family-sustainability-index/.

⁶ 25th Percentile. Lightcast. 2024.03; QCEW, Non-QCEW, Self-Employed.

⁷ “AB-927 Public postsecondary education: community colleges: statewide baccalaureate degree.” California Legislative Information. Accessed 09/05/2024. leginfo.ca.gov/faces/billTextClient.xhtml?bill_id=202120220AB927

BDP PROPOSAL REQUIREMENTS

UC and CSU Programs

According to AB-927, community colleges must not offer a BDP or program curricula already offered by the CSU or UC systems. To determine if a BDP already exists for [Building Performance and Environmental Design Occupations](#), the COE examined CSU and UC programs in related Classification of Instructional Programs (CIP) codes and found two CIP codes that train for these occupations:⁸

- 04.0401 Building Performance and Environmental Design
- 46.0403 Building/Home/Construction Inspection/Inspector

The COE excluded TOP and CIP codes such as Business Administration (0505.00), Business Management (0506.00), and Business Administration and Management, General (52.0201) because they apply to multiple occupations and would introduce too much noise in the data.

According to CIP data, the following institutions from the UC and CSU systems offer programs related to [Building Performance and Environmental Design Occupations](#) (Exhibit 1).

Exhibit 1: California UC and CSU Institutions with Related Programs by CIP Code (2022)⁹

CIP Code and Title
04.0401 Building Performance and Environmental Design
<ul style="list-style-type: none">• University of California-Berkeley• University of California-Davis• University of California-Irvine
46.0403 Building/Home/Construction Inspection/Inspector
<ul style="list-style-type: none">• San Diego State University

⁸ CIP data comes from the Integrated Postsecondary Education Data System (nces.ed.gov/ipeds/use-the-data). The COE uses the national SOC-CIP crosswalk to determine which programs could potentially train for the occupation in question. nces.ed.gov/ipeds/cipcode/post3.aspx?y=56

⁹ Lightcast. Q3 2024 Data Set. Program Overview. Completions by Institutions. Completions data for 2020 and 2022 to account for programs not captured after decline in enrollment from the COVID-19 pandemic.

Existing Associate Degree Program(s)

AB-927 also states that districts should “continue to offer an associate degree program in the same academic subject for which a baccalaureate degree program has been approved.” To determine if an associate degree program in the same subject area exists, the COE reviewed the [California Community Colleges Chancellor’s Office’s official TOP-CIP crosswalk](#) and found that there are five TOP codes and three CIP codes related to Building Performance and Environmental Design Occupations (Exhibit 2).

Exhibit 2: Chancellor’s Office TOP-CIP Crosswalk for Baccalaureate Degree Programs

TOP Code	TOP Title	CIP Code	CIP Title
0201.00	Architecture and Architectural Technology	04.0401	Building Performance and Environmental Design
0299.00	Other Architecture and Environmental Design	46.0403	Building/Home/Construction Inspection/Inspector
0957.20	Construction Inspection		

According to the [Chancellor’s Office Curriculum Inventory \(COCI\)](#), **four** regional community colleges offer an associate degree program for the CIP codes listed above (Exhibit 3).¹⁰

Exhibit 3: San Diego Community Colleges with Associate Degree Programs in Related CIP Codes

CIP Code	CIP Title	Community College(s) with Program in CIP Code
04.0401	Building Performance and Environmental Design	<ul style="list-style-type: none">• MiraCosta• Palomar• San Diego Mesa• Southwestern
46.0403	Building/Home/Construction Inspection/Inspector	<ul style="list-style-type: none">• Palomar• San Diego Mesa• Southwestern

¹⁰ “Programs. California Community Colleges Curriculum Inventory (COCI).” Accessed 09/05/2024. coci2.ccctechcenter.org/programs

WORKFORCE NEEDS ASSESSMENT: SUPPLY VS. DEMAND

According to AB-927, community colleges must identify and document unmet workforce needs “in the local community or region of the district.” To assess the regional workforce need for [Building Performance and Environmental Design Occupations](#), this section compares educational supply with labor market demand.

Educational Supply

Baccalaureate educational supply for an occupation can be estimated by analyzing the number of completions¹¹ in related CIP codes. According to CIP data, there were zero completions in San Diego County (Exhibit 4) and 43 completions in California (Exhibit 5) for [Building Performance and Environmental Design Occupations](#).

Exhibit 4: Number of Completions by Postsecondary Institutions (San Diego County, 2022)

CIP Code	CIP Title	Completions (2022)
04.0401	Building Performance and Environmental Design	0
46.0403	Building/Home/Construction Inspection/Inspector	0
	<ul style="list-style-type: none">San Diego State University	0
Total		0

Exhibit 5: Number of Completions by Postsecondary Institutions (California, 2022)

CIP Code	CIP Title	Completions (2022)
04.0401	Building Performance and Environmental Design	43
46.0403	Building/Home/Construction Inspection/Inspector	0
Total		43

¹¹ Completion numbers include bachelor's degree programs or higher.

Labor Market Demand

In 2018, there were 16,523 and 150,836 jobs for [Building Performance and Environmental Design Occupations](#) in San Diego County and California, respectively. In 2023, the number of jobs in San Diego County increased to 19,442, which was an 18 percent increase. In California, the number of jobs for [Building Performance and Environmental Design Occupations](#) increased to 186,690, which was a 24 percent increase (Exhibit 6).

Exhibit 6: Historical Employment Trend for Building Performance and Environmental Design Occupations¹²

SOC Code	Occupational Title	2018 Jobs		2023 Jobs	
		San Diego	California	San Diego	California
13-1199	Business Operations Specialists, All Other	15,365	138,279	18,181	171,674
47-4011	Construction and Building Inspectors	1,158	12,557	1,261	15,016
	Total	16,523	150,836	19,442	186,690

Between 2023 and 2033, employers in San Diego County will need to hire 1,925 workers annually to fill new jobs and backfill jobs due to attrition caused by turnover and retirement for [Building Performance and Environmental Design Occupations](#) (Exhibit 7). Across California, the projected demand will be 18,977 annual job openings between 2023 and 2033.

Exhibit 7: Labor Demand (Annual Job Openings) for Building Performance and Environmental Design Occupations¹³

SOC Code	Occupational Title	Average Annual Job Openings		Total 10-Yr Demand (2023-2033)	
		San Diego	California	San Diego	California
13-1199	Business Operations Specialists, All Other	1,765	17,074	1,765	17,074
47-4011	Construction and Building Inspectors	160	1,904	160	1,903
	Total	1,925	18,977		

¹² Lightcast. 2024.03; QCEW, Non-QCEW, Self-Employed.

¹³ Lightcast. 2024.03; QCEW, Non-QCEW, Self-Employed.

Demand vs. Supply

Comparing labor market demand (annual job openings) with educational supply (bachelor's degree completions) suggests that there is a **supply gap** for **Building Performance and Environmental Design Occupations** in San Diego County, with **1,925** annual openings and **zero** awards. Comparatively, there are **18,977** annual openings in California and **43** awards, suggesting that there is also a **supply gap** across the state ¹⁴ (Exhibit 8).

Exhibit 8: Labor Demand (Job Openings) vs. Educational Supply (Completions)¹⁵

	Demand (Job Openings)	Supply (Completions)	Supply Gap or Oversupply
San Diego County	1,925	0	1,925
California	18,977	43	18,934

¹⁴ "Supply and Demand," Centers of Excellence Student Outcomes, coeccc.net/our-resources

¹⁵ This is a basic analysis of supply and demand of labor. The data does not include workers currently in the labor force who could fill these positions or workers who are not captured by publicly available data. This data should be used to discuss the potential gaps or oversupply of workers; however, it should not be the only basis for determining whether or not a program should be developed.

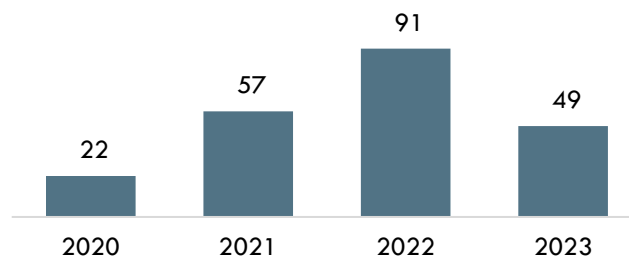
OTHER LMI TO CONSIDER FOR PROGRAM DEVELOPMENT

Online Job Postings

This report analyzes not only historical and projected (traditional LMI) data, but also recent data from online job postings (real-time LMI). Online job postings may provide additional insight about recent changes in the labor market that are not captured by historical data. While [Building Performance and Environmental Design Occupations](#) include “Business Operations Specialists, All Other” and “Construction and Building Inspectors,” employers do not typically use these formal occupational titles when recruiting for environmental positions. As a result, this section explores online job postings that include job titles with “Energy” or “Sustainability”¹⁶ which employers commonly use to hire for these roles.

There was an average of 55 online job postings per year for “Energy” or “Sustainability” in San Diego County between 2020 and 2023 (Exhibit 9). Please note that online job postings do **not** equal labor market demand; demand is represented by annual job openings (see Exhibit 6). While this brief includes online job postings data to help with curriculum development, the community colleges should note that this type of data is impacted by several variables: employers may post a position multiple times to increase the pool of applicants; a job posting can remain posted after a business decides not to fill a position; or an employer may use one posting to fill multiple positions, for example.

Exhibit 9: Number of Online Job Postings with Job Titles in “Energy” or “Sustainability” for Building Performance and Environmental Design Occupations in San Diego County (2020-2023)¹⁷



¹⁶ Lightcast. 2024.03 – QCEW Employees, Non-QCEW Employees, and Self-Employed data set. “Job Postings Analytics” for selected SOC codes. Numbers in the exhibit reflect “unique postings” or de-duplicated online job postings. Job titles include: “Building Science Consultants,” “Chief Sustainability Managers,” “Directors of Sustainability,” “Energy Advisors,” “Energy Auditors,” “Energy Consultants,” “Energy and Sustainability Managers,” “Sustainability Advisors,” “Sustainability Analysts,” “Sustainability Assistants,” “Sustainability Associates,” “Sustainability Coordinators,” “Sustainability Managers,” “Sustainability Officers,” “Sustainability Program Coordinators,” “Sustainability Program Managers,” “Sustainability Project Managers” “Sustainability Specialists.”

¹⁷ Lightcast; “Job Posting Analytics.” 2020-2023.

While labor market demand cannot be determined for “Energy” or “Sustainability” roles, the COE estimates that approximately 6.5 percent of the occupations in San Diego County and 6.7 percent in California have roles in “Energy” or “Sustainability” based on the percentage of online job postings that listed “Energy” or “Sustainability” job titles (Exhibit 10). Based on this information, there is an estimated labor market demand of 125 and 1,234 annual job openings for “Energy” or “Sustainability” in San Diego County and California, respectively (Exhibit 11).

Exhibit 10: Online Job Postings for Selected SOC Codes and “Energy” or “Sustainability” Job Titles (January 2021 - December 2023)¹⁸

	Online Job Postings (San Diego)	Online Job Postings (California)
Occupations listed in Exhibit 5	3,029	33,512
Occupations listed in Exhibit 5 and filtered by “Energy” and “Sustainability” jobs titles	197	2,239
% of online job postings with job titles above	6.5%	6.7%

Exhibit 11: Number of Annual Job Openings (Labor Market Demand) by SOC Code, 2023-2033¹⁹

SOC Code	Occupational Title	Average Annual Job Openings		Estimated Annual Job Openings for “Energy” and “Sustainability” ²⁰	
		San Diego	California	San Diego	California
47-4011	Construction and Building Inspectors	1,765	17,074	115	1,110
13-1199	Business Operations Specialists, All Other	160	1,904	10	124
	Total	1,925	18,977	125	1,234

¹⁸ Lightcast. 2024.03 – QCEW Employees, Non-QCEW Employees, and Self-Employed data set. “Job Postings Analytics” for selected SOC codes. Numbers in the exhibit reflect “unique postings” or de-duplicated online job postings. Job titles include: “Building Science Consultants,” “Chief Sustainability Managers,” “Directors of Sustainability,” “Energy Advisors,” “Energy Auditors,” “Energy Consultants,” “Energy and Sustainability Managers,” “Sustainability Advisors,” “Sustainability Analysts,” “Sustainability Assistants,” “Sustainability Associates,” “Sustainability Coordinators,” “Sustainability Managers,” “Sustainability Officers,” “Sustainability Program Coordinators,” “Sustainability Program Managers,” “Sustainability Project Managers” “Sustainability Specialists.”

¹⁹ Lightcast. 2024.03 – QCEW Employees, Non-QCEW Employees, and Self-Employed data set. Numbers in the “Estimated Annual Job Openings for “Energy” and “Sustainability” roles reflect the 6.5% (% of online job postings with ‘Energy’ or ‘Sustainability’ job titles) multiplied against the average annual job openings for each occupation.

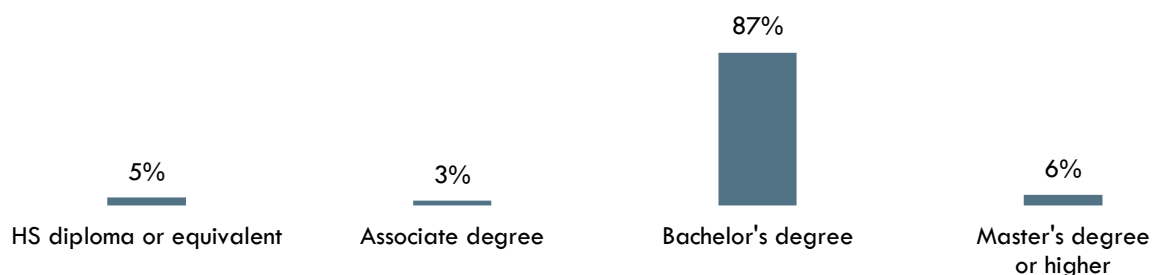
Between January 1, 2021, and December 30, 2023, employers in California advertised hourly wages ranging from \$21.66 to \$24.25 for online job postings in [Building Performance and Environmental Design Occupations](#) requiring less than a bachelor's degree. For positions requiring a bachelor's degree, the advertised wages were between \$34.34 and \$37.78 per hour. This suggests a notable increase in entry-level wages for those holding a bachelor's degree (Exhibit 12).

Exhibit 12: Entry-Level Advertised Wages in Online Job Postings with Job Titles in “Energy” or “Sustainability” for Building Performance and Environmental Design Occupations by Education Level in California (2023)²¹

Minimum Required Education	Range of Advertised Wages at the 25 th Percentile (2023)	
	Low	High
Bachelor’s degree	\$34.34	\$37.78
Below a Bachelor’s degree	\$21.66	\$24.25

Based on online job postings between January 1, 2021 and December 31, 2023 in California, employers posted a [bachelor’s degree](#) as the minimum educational requirement for [Building Performance and Environmental Design Occupations](#) (Exhibit 13).²²

Exhibit 13: Educational Requirements with Job Titles in “Energy” or “Sustainability” for Building Performance and Environmental Design Occupations in California²³



*May not total 100 percent due to rounding

²¹ Lightcast; “Job Posting Table.” 2023.

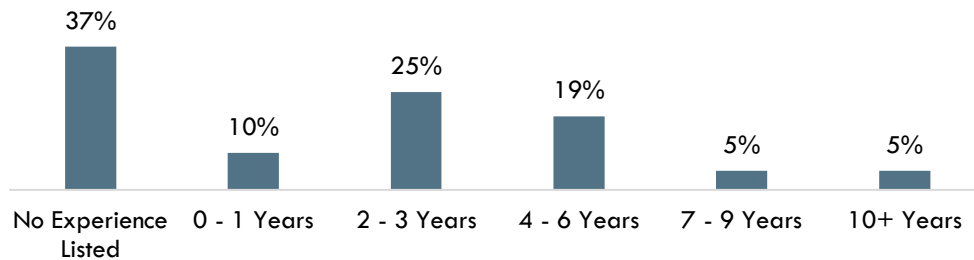
²² Lightcast; “Job Posting Analytics.” 2021-2023.

²³ Lightcast; “Job Posting Analytics.” 2021-2023.

Work Experience

Based on online job postings, 37 percent of job postings for Building Performance and Environmental Design Occupations do not list an experience requirement and 25 percent require that candidates have 2-3 years of experience (Exhibit 14).

Exhibit 14: Work Experience Requirement with Job Titles in “Energy” or “Sustainability” for Building Performance and Environmental Design Occupations in California²⁴



Top Employers

Between January 1, 2021 and December 31, 2023, the top five employers in San Diego County were WSP Global, Live Nation, Abraxas Energy Consulting, Deloitte, and The Boston Consulting Group based on online job postings (Exhibit 15).

Exhibit 15: Top Employers with Job Titles in “Energy” or “Sustainability” for Building Performance and Environmental Design Occupations in San Diego County²⁵

Top Employers	
<ul style="list-style-type: none">• WSP Global• Live Nation• Abraxas Energy Consulting• Deloitte• The Boston Consulting Group	<ul style="list-style-type: none">• AECOM• Stryker• Accenture• Verdani Partners• University of California San Diego

²⁴ Lightcast; “Job Posting Analytics.” 2021-2023.

²⁵ Lightcast; “Job Posting Analytics.” 2021-2023

Skills and Certifications

Exhibit 16 lists the top specialized, soft, and software skills that appeared in online job postings between January 1, 2021 and December 31, 2023 for these occupations.

Exhibit 16: Top Skills with Job Titles in “Energy” or “Sustainability” for Building Performance and Environmental Design Occupations in California²⁶

Specialized Skills	Soft Skills	Software Skills
<ul style="list-style-type: none"> • Project Management • Environmental Social And Corporate Governance • Environmental Science • Data Analysis • Auditing • Greenhouse Gas • Sustainability Strategies • Marketing • Economics • Green Building 	<ul style="list-style-type: none"> • Communication • Management • Research • Presentations • Operations • Planning • Writing • Leadership • Problem Solving • Consulting 	<ul style="list-style-type: none"> • Microsoft Excel • Microsoft PowerPoint • Microsoft Word

Exhibit 17 lists the top certification that appeared in online job postings between January 1, 2021 and December 31, 2023.

Exhibit 17: Top Certifications with Job Titles in “Energy” or “Sustainability” for Building Performance and Environmental Design Occupations in California²⁷

Top Certification in Online Job Postings
<ol style="list-style-type: none"> 1. LEED Accredited Professional (AP) 2. Valid Driver's License 3. Building Energy Modeling Professional Certification 4. Certified Energy Manager 5. LEED Green Associate 6. Project Management Professional Certification

²⁶ Lightcast; “Job Posting Analytics.” 2021-2023. Skills must populate in at least 10% of job postings to be listed.

²⁷ Lightcast; “Job Posting Analytics.” 2021-2023

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All representations included in this report have been produced from primary research and/or secondary review of publicly and/or privately available data and/or research reports. This study examines the most recent data available at the time of the analysis; however, data sets are updated regularly and may not be consistent with previous reports. Efforts have been made to qualify and validate the accuracy of the data and the report findings; however, neither the Regional Centers of Excellence (COE), COE host district, nor California Community Colleges Chancellor's Office are responsible for the applications or decisions made by individuals and/or organizations based on this study or its recommendations.