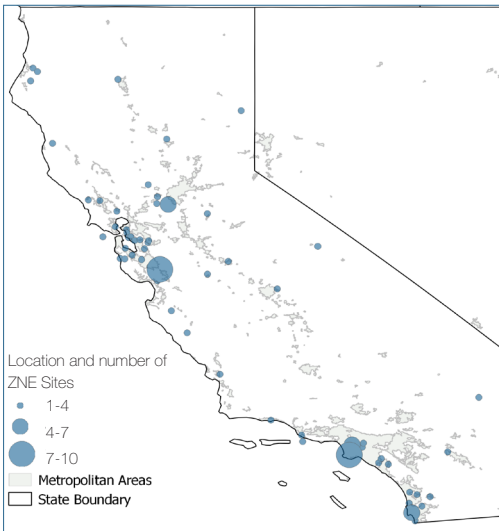


# California ZNE Watchlist

## Zero Energy & Ultra-Low Energy Buildings



California state agencies have adopted goals for 100% of new and 50% of existing commercial buildings to be ZNE by 2030.

California leads the country in both policy and projects that are laying the path to a zero net energy (ZNE) future. Leading design firms and owners have already recognized the real estate and occupancy advantages of these high performance buildings and today California has 108 commercial buildings either verified (17) as ZNE or emerging (91) toward that target.

This CA ZNE Watchlist tracks commercial buildings (including multi-family) based on information gathered by New Buildings Institute (NBI) from multiple sources including designers, owners, utility programs, private and public organizations, articles, e-news, research, and commercial real estate professionals. It serves, along with other available ZNE resources<sup>1</sup>, to support the awareness, acceptance and adoption of ZNE goals and outcomes throughout California and the nation. Buildings with ultra-low energy performance comparable to ZNE are also included.

### Trends in Zero Net Energy

Education buildings are the leading ZNE building types across the US, and this edition highlights California is right in line with this national trend. Further trends in California locations, building types and sizes are illustrated in the chart at the left and on the following page. The Spring/Summer 2016 edition of the ZNE Watch List includes five ZNE Verified and 38 ZNE Emerging education buildings across higher education, K-12, and general education sectors. With efforts underway to advance ZNE school retrofits through California's Proposition 39, it is anticipated that many more buildings in the education sector will soon be on the path to zero.



### Stevens ZNE Library | Sacred Heart Elementary School

The Stevens Library in Atherton is the first verified zero net energy school building in California and an innovative model for zero net energy schools everywhere. Built in 2012, the 6,800 square foot library recently received its Net Zero Energy Building Certification from the International Living Future Institute and is targeted to be LEED® Platinum. The building features natural ventilation and daylighting augmented by high performance lighting, high-efficiency mechanical systems and a 42.5-kW low-profile, photovoltaic system. The large system was sized to provide 15% more capacity than modeled, which helps its overall performance and provides needed energy for the required greywater filter and pump system. The project includes an energy monitoring system dashboard for public education and was designed and constructed at 20% below industry standard prices. The project has a total energy use intensity (EUI) of 16.9, a renewable production intensity (RPI) of 29.1, and a net EUI of -12.2, making it a net positive energy producer.



<sup>1</sup> For more resources: CPUC (<http://www.cpuc.ca.gov/PUC/energy/Energy+Efficiency/Zero+Net+Energy+Buildings.htm>) and NBI ([www.newbuildings.org/zero-energy](http://www.newbuildings.org/zero-energy))

# List of Zero Energy & Ultra-Low Energy Buildings in California

This ZNE Watchlist provides examples of commercial buildings that have verified zero net energy (ZNE) performance, are emerging toward a ZNE goal or reflect comparable ultra-low energy performance. The buildings on the list are categorized at ZNE Verified, ZNE Emerging, and Ultra-low Energy.

**ZNE Verified** buildings (or districts) have been documented to have met, over the course of a year, all net energy use through onsite renewables. The energy use of all fuels (electric, natural gas, steam, etc.) is counted and offset by production from onsite renewables.

Building Name	Year Completed	Location	Building Type	Size SF	Total EUI	Site RPI	Net EUI
<b>Verified ZNE</b>							
Audubon Center at Debs Park (off grid)	2003	Los Angeles	Other	5,020	17.1	17.1	0.0
Bacon St. Offices	2009	San Diego	Office	4,500	12.7	22.2	-9.5
Challengers Tennis Club	2002	Los Angeles	Other	3,500	9.0	9.0	0.0
David and Lucile Packard Foundation <sup>L</sup>	2012	Los Altos	Office	49,161	24.4	29.0	-4.6
Diamond X Ranch Student Intern Center-Malibu	2011	Calabasas	Other	3,500	31.5	35.1	-3.6
DPR Construction San Diego Net Zero Office	2010	San Diego	Office	24,000	14.8	17.1	-2.4
DPR San Francisco Office	2014	San Francisco	Office	24,010	3.3	3.4	-0.1
EcoCenter at Heron's Head Park (off grid)	2011	San Francisco	Education - General	2,400	N/A	N/A	N/A
Environmental Nature Center	2008	Newport Beach	Other	8,535	17.6	27.7	-10.1
Environmental Tech. Center Sonoma State	2001	Rohnert Park	Education - Higher	2,200	2.3	3.8	-1.5
IBEW Local 595 Zero Net Energy Center	2013	San Leandro	Education - General	45,001	15.0	21.0	-6.0
IdeAs Z2 Design Facility <sup>L</sup>	2007	San Jose	Office	6,557	22.6	23.2	-0.6
Jess Jackson Sustainable Winery Building	2014	Davis	Warehouse & Storage	8,500	1.4	2.7	-1.3
Leslie Shao-Ming Sun Field Station	2002	Redwood City	Education - Higher	13,200	7.1	8.5	-1.4
Sacred Heart Schools Stevens Family Library <sup>L</sup>	2012	Atherton	Education / Library	6,800	16.9	29.1	-12.2
Watsonville Water Resources Center Admin Building	2009	Watsonville	Office	16,000	51.4	117.8	-66.4
West Berkeley Public Library <sup>L</sup>	2013	Berkeley	Library	9,399	24.7	27.6	-2.9

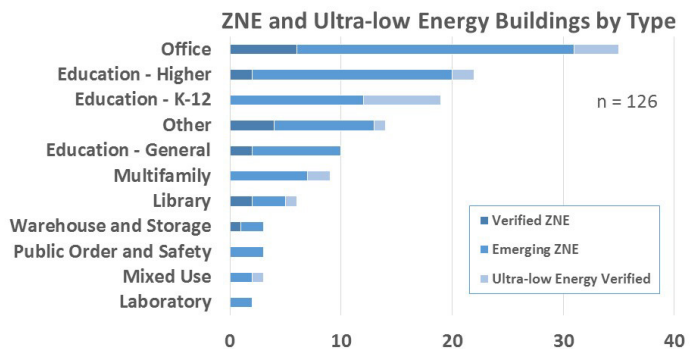
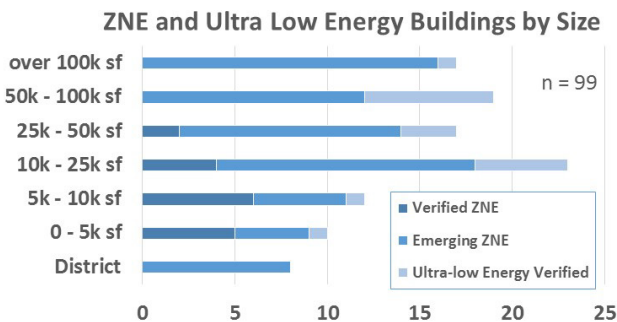
<sup>L</sup>-Building is Net Zero Energy Building Certified by the International Living Future Institute.

(M) after the name indicates measured energy use. All others are estimated / modeled.

Buildings listed in **Bold** are new to the California ZNE Watchlist.

**Energy Use Intensity (EUI)** is the (total or net) building use of site energy in kBtus/sf/yr. Buildings that have been verified as ZNE have either a zero net building EUI or a negative net building EUI meaning the renewable production exceeded the energy use.

**Renewable Production Intensity (RPI)** is the energy generation onsite per year in kBtus/sf/yr. This term was created by NBI for use in this context.



**ZNE Emerging** buildings (or districts) have a publically stated goal of ZNE but do not yet meet the definition of ZNE verified. These may be in the planning or design phase, under construction or have been in operation for less than a year. Others may have been operating for 12 months or longer, but their measured energy has either yet to achieve net zero or the measured data to document ZNE verified status was not available.

Building Name	Year Completed	Location	Building Type	Size SF	Total EUI	Site RPI	Net EUI
<b>Emerging ZNE</b>							
435 Indio Way	2013	Sunnyvale	Office	31,800	21.5	18.0	3.5
<b>AP+I</b>	<b>2015</b>	<b>Mountain View</b>	<b>Office</b>	<b>14,300</b>			
Aquarium of the Pacific Watershed Addition	2008	Long Beach	Education - General	2,500			
Aster Place	2012	Eureka	Multifamily				
Bagatelos Architectural Glass Solutions	2008	Sacramento	Warehouse and Storage	63,000	10.4	8.1	2.3
BEST Center at Laney College		Oakland	Education - Higher				
Blackford School Multi-Use Building	2013	San Jose	Education - K-12				
Broadway High School	2011	San Jose	Education - K-12				
<b>Butte Glenn Community College</b>	<b>2011</b>	<b>Oroville</b>	<b>Education - Higher</b>	<b>800,000</b>	<b>38.9</b>	<b>27.2</b>	<b>11.7</b>
<b>CA Air Resources Board ZNE Building</b>		<b>Sacramento</b>	<b>Laboratory</b>	<b>300,000</b>			
CA Lottery District Office	2015	Santa Fe Springs	Office	12,800	23.0	0.0	23.0
California Department of Motor Vehicles		Sacramento	Office	520,000			
California DOT SFOBB Phase 2 Warehouse		Oakland	Warehouse & Storage				
Camp Parks		Dublin	Other				
Church Hill Townhomes	2013	Fortuna	Multifamily				
City of Hayward 21 <sup>st</sup> Century Library	2015	Hayward	Library	57,000	35.6	43.2	-7.6
<b>City Services Building</b>	<b>2019</b>	<b>Santa Monica</b>	<b>Office</b>	<b>50,000</b>			
College of the Desert West Valley Campus - Phase 1	2013	Palm Springs	Education - Higher	50,000	22.0	24.0	-2.0
Conrad N. Hilton Foundation	2012	Agoura Hills	Office	22,240	22.0	24.0	-2.0
<b>Delta Americas Headquarters</b>	2015	Fremont	Office	200,000	50.1	36.7	13.4
<b>Egan Junior High School</b>		<b>Los Altos</b>	<b>Education - K-12</b>	<b>17,000</b>			
Exploratorium Pier 15 (M)	2013	San Francisco	Other	330,000	45.0	37.0	8.0
<b>Fair Oaks Zero Net Energy Office</b>		<b>Pasadena</b>	<b>Office</b>	<b>12,000</b>			
Family Pet Hospital	2014	Clovis	Other	8,700			
<b>Foothill College Sunnyvale Center</b>	<b>2016</b>	<b>Los Altos</b>	<b>Education - Higher</b>	<b>50,000</b>			
Forest Service's Technology and Development Center	2013	San Dimas	Office				
Fort Hunter Liggett		Jolon	Other		23.9		23.9
<b>Fremont High School</b>	<b>2020</b>	<b>Oakland</b>	<b>Education - K-12</b>				
<b>Garfield Elementary School</b>		<b>San Francisco</b>	<b>Education - K-12</b>	<b>33,422</b>			
George V Leyva Middle School Admin Bldg - San Jose	2011	San Jose	Office	9,200			
<b>Glumac Office Aon Center Floor 23</b>	<b>2014</b>	<b>Los Angeles</b>	<b>Office</b>	<b>17,500</b>			
<b>Half Moon Bay Library</b>	<b>2018</b>	<b>Half Moon Bay</b>	<b>Library</b>	<b>22,000</b>			
Hanover Page Mill Building	2015	Palo Alto	Office	86,253	15.3	21.0	-5.7
<b>High Tech Middle North County</b>		<b>San Diego</b>	<b>Education - Higher</b>	<b>27,058</b>			
<b>Housing and Community Development Office</b>	<b>2017</b>	<b>San Diego</b>	<b>Office</b>	<b>29,408</b>	<b>26.1</b>	<b>30.2</b>	<b>-4.1</b>
Imperial Beach Branch Library	2016	Imperial Beach	Library	14,000			
<b>Irvine High School Campus Center</b>		<b>Irvine</b>	<b>Education - K-12</b>				
<b>Kaiser Permanente San Jose Medical Office Building</b>		<b>San Jose</b>	<b>Office</b>				



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Building Name	Year Completed	Location	Building Type	Size SF	Total EUI	Site RPI	Net EUI
<b>Kaiser Permanente Antelope Valley Medical Office</b>	<b>2014</b>	<b>Lancaster</b>	<b>Office</b>	<b>136,800</b>	<b>31.0</b>	<b>6.0</b>	<b>25.0</b>
<b>LA Convention Center</b>		<b>Los Angeles</b>	<b>Other</b>	<b>1,000,000</b>			
La Escuelita Education Center	2014	Oakland	Education - K-12	123,000			
La Valentina North	2012	Sacramento	Multifamily	19,875	31.0	6.0	25.0
Los Angeles Harbor College Sciences Complex	2013	Los Angeles	Education - Higher	73,767			
Los Guillicos Correctional Facility	2013	Santa Rosa	Public Order and Safety	149,000	23.9	1.1	22.8
LPL Financial Center at La Jolla Commons	2014	San Diego	Office	415,000			
<b>Makers Quarter Block D</b>	<b>2017</b>	<b>San Diego</b>	<b>Office</b>	<b>52,974</b>	<b>46.8</b>	<b>27.0</b>	<b>19.8</b>
<b>Mathilda</b>	<b>2015</b>	<b>Sunnyvale</b>	<b>Office</b>	<b>33,750</b>			
<b>Meritage</b>		<b>Coto De Caza</b>	<b>Office</b>				
<b>Mokelumne Watershed Headquarters</b>	<b>2011</b>	<b>Campo seco</b>	<b>Mixed Use</b>	<b>5,675</b>	<b>10.4</b>	<b>9.8</b>	<b>0.6</b>
<b>Monterey Bay CSU - Academic Building 2</b>	<b>2015</b>	<b>Seaside</b>	<b>Education - Higher</b>	<b>57,331</b>			
Morphosis Architecture Studio	2012	Culver City	Office	11,600	24.0	20.0	4.0
<b>Mt. San Antonio College</b>		<b>Walnut</b>	<b>Education - Higher</b>	<b>20,610</b>			
<b>Muse School</b>		<b>Calabasas</b>	<b>Education - K-12</b>				
Mutual Housing at Spring Lake	2015	Woodland	Multifamily	64,600			
NASA Sustainability Base	2012	Mountain View	Office	50,000			
Net Zero Plus Electrical Training Institute	2015	Los Angeles	Education - General	142,000			
Oak Park High School	2014	Oak Park	Education - K-12	960			
Ohlone Campus Core Replacement Project	2017	Fremont	Education - Higher				
<b>Palomar Community College</b>	<b>2017</b>	<b>San Marcos</b>	<b>Education - General</b>				
Pierce College Maintenance & Operations Facility and Net-Zero Central Plant	2011	Los Angeles	Other	42,000	16.0	8.0	8.0
Plaza Point	2012	Arcata	Multifamily				
<b>Prospect Sierra Founders Art Center</b>		<b>El Cerrito</b>	<b>Education - General</b>	<b>5,000</b>			
Redding School for the Arts (M)	2011	Redding	Education - K-12	77,091	16.0	8.0	8.0
<b>Rio Hondo Community College District</b>		<b>Whittier</b>	<b>Education - Higher</b>	<b>78,201</b>			
Rohner Village	2013	Fortuna	Multifamily				
<b>San Bernardino Community College District</b>		<b>Garden Grove</b>	<b>Education - Higher</b>				
San Luis National Wildlife Refuge Complex HQ and Visitor Ctr. (M)	2012	Los Banos	Education - General	16,500			
<b>Santiago High School Science Building</b>	<b>2017</b>	<b>Garden Grove</b>	<b>Education - K-12</b>	<b>8,000</b>	<b>26.0</b>	<b>0.0</b>	<b>26.0</b>
SFO Airfield Operations Terminal - VIP Center	2014	San Mateo	Other	8,300			
SFO Airport Campus	2020	San Mateo	Other				
SFO Firehouse #3	2016	San Mateo	Public Order and Safety	20,000			
SFO Ground Transportation Unit Facility	2017	San Mateo	Other	14,000			
Sierra Army Depot		Herlong	Public Order and Safety				
Sierra Nevada Aquatic Research Lab & Multiuse Classrom	2015	Mammoth Lakes	Education - Higher	2,696			
SMUD Net Zero Campus - East Campus-Operations Center	2013	Sacramento	Office	350,000			
Solana Ranch Elementary School	2014	San Diego	Education - K-12	68,000			
Solterra EcoLuxury Apartments	2013	San Diego	Multifamily				
<b>Sonoma Academy</b>	<b>2017</b>	<b>Santa Rosa</b>	<b>Education - General</b>	<b>130,000</b>			
<b>Sonoma County Junior College District</b>		<b>Sonoma</b>	<b>Education - Higher</b>	<b>26,954</b>			
Southern Distribution Center	2015	Rancho Cucamonga	Office	60,600	12.0	0.0	12.0
Stanford Central Energy Facility Admin Building		Stanford	Office				



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Building Name	Year Completed	Location	Building Type	Size SF	Total EUI	Site RPI	Net EUI
Student Services Center at Mesa College	2012	San Diego	Education - Higher	85,000			
Student Success & Retention Center at E. Los Angeles College	2014	Los Angeles	Education - Higher	136,000			
UC Davis West Village (eco district)	2012	Davis	Mixed Use		50.0	0.0	50.0
UC Merced	2020	Merced	Education - Higher	6,250,000			
UC San Diego J Craig Venter Institute	2013	La Jolla	Laboratory	45,000	68.0	81.0	-13.0
UC Santa Barbara Recreation Center	2014	Santa Barbara	Education - Higher	140,000			
UC Santa Barbara Student Services Buildings		Santa Barbara	Education - Higher				
VF Outdoor HQ (M)	2013	Alameda	Office	160,000			
<b>Vista Grande Elementary School</b>	<b>2016</b>	<b>Rancho Palos Verdes</b>	<b>Education - General</b>				
<b>William S Hart High School District</b>		<b>Santa Clarita</b>	<b>Education - General</b>				
<b>Ultra-low Energy Verified</b>							

**Ultra-low Energy Verified** buildings have 12 or more months of metered data that documents energy performance comparable to ZNE buildings (typically 60-80% better than the national industry average). They expand the set of building examples with design strategies and technologies that have resulted in ultra-low energy use. They may have limited renewable resources onsite but do not have a known stated goal of ZNE.

Building Name	Year Completed	Location	Building Type	Size SF	Total EUI	Site RPI	Net EUI
355 11 <sup>th</sup> Street: The Matarozzi/Pelsinger Multi-Use Building (M)	2010	San Francisco	Mixed Use	14,000			
Alameda County Library (M)	2011	Castro Valley	Library	34,537	64.0	47.0	17.0
Aventine		La Jolla	Office	253,000	23.0	0.0	23.0
Carlton Hills Modernization (M)	2008	Santee	Education - K-12	56,159	26.0	0.0	26.0
Carlton Oaks Modernization	2008	Santee	Education - K-12	61,675	24.0	0.0	24.0
Center for Children & Families-CSU San Marcos (M)	2007	San Marcos	Education - Higher	20,200	28.0	0.0	28.0
Claiborne & Churchill Winery	1996	San Luis Obispo	Office	2,585	20.0	0.0	20.0
Colorado Court Affordable Housing (M)	2002	Santa Monica	Multifamily	29,900	39.0	2.0	37.0
Georgina Blach Intermediate School (M)	2002	Los Altos	Education - K-12	71,741	33.0	0.0	33.0
High Tech High - Chula Vista (M)	2009	Chula Vista	Education - K-12	44,370	23.8	0.0	23.8
Jane D'Aza House of Formation (M)	2005	San Rafael	Other	6,200	7.0	0.0	7.0
Jeffrey Trail Middle School	2013	Irvine	Education - K-12	74,600	29.0	12.0	17.0
Kirsch Center For Environmental Studies at De Anza College (M)	2005	San Jose	Education - Higher	21,600	33.0	10.0	23.0
Los Vecinos - Multifamily (M)	2009	Chula Vista	Multifamily	51,000	19.0	9.0	10.0
Navy Building 850 (M)		Port Hueneme	Office	17,000	25.0	11.0	14.0
Ridgehaven Office Building (M)	1995	San Diego	Office	78,000	24.0	0.0	24.0
Sycamore Canyon Modernization (M)	2008	Santee	Education - K-12	52,000	23.0	0.0	23.0
Westmont High School Science Education Facility (M)	2004	Campbell	Education - K-12	12,362	19.0	0.0	19.0

The ZNE Watch List is produced by New Buildings Institute. For more information, visit [www.newbuildings.org](http://www.newbuildings.org). There are, undoubtedly, other projects that belong on this list and/or corrections and updates to this directory. Provide information or add new projects through the NBI Registry located at: [newbuildings.org/share](http://newbuildings.org/share) or email us at [info@newbuildings.org](mailto:info@newbuildings.org).

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