

## Zero Energy Buildings in Arizona

Project Name	City	Program*	Status	Bldg. Type	Sq Ft	Builder	# of Bldgs	Year
Armory Park Del Sol	Tucson	ZNE	Certified	Home	1700	John Wesley Miller Builder	2	2007
Cesar Chavez Library	Laveen	HP	Certified	Library	25,234	---	1	2007
City of Tucson Sun Tran Maintenance & Fueling	Tucson	LEED Gold	Certified	Other	72,900	GLHN Architecture & Eng.	5	2012
Colonel Smith Middle School	Fort Huachuca	ZNE	Emerging	Education	88,693	---	1	2012
The Desert Passive House	Herford	PHIUS	Certified	House	2,190	---	1	2012
DPR Construction Phoenix Office	Phoenix	ZNE	Verified	Office	16,533	DPR Construction	1	2012
EC-130H Simulator Training Facility	Tucson	HP	Emerging	Public Safety	4680	---	---	2015
Environmental Showcase Home	Scottsdale	HP	Innovative	Lodging	2640	---	1	1994
Fireside Elementary	Phoenix	ZNE	Emerging	Education	88,664	---	1	2012
Flagstaff Meadows	Belmont	ZERH	Emerging	House	Varies	Capstone Homes	182	2017
Frito-Lay Casa Grande Snack Factory	Casa Grande	ZNE	Emerging	Other	188,000	---	1	2010
Green Phoenix Learning Center	Phoenix	ZNE	Emerging	Education	3,600	---	1	2010
Hawthorne House	Tucson	ZNE	Retrofit	House	1,930	John Wesley Miller Builder	1	2007
Mandalay Homes	Phoenix	ZERH	Emerging	House	Varies	Mandalay Homes	330	2013-Present
MEC Aviation Campus	Glendale	ZNE	Emerging	Education	85,000	---	---	2010
MEC Northeast Campus	Phoenix	ZNE	Emerging	Education	101,081	---	---	2014
Meritage Homes	Scottsdale	ZERH,ZNE	Verified	House	Varies	Meritage Homes	---	2012-Present
Orangewood Middle School and Studio Project	Phoenix	ZNE	Emerging	Education	---	---	1	2012
Pronghorn Ranch	Phoenix	ZNE	Emerging	House	---	---	---	2014
REI Warehouse/distribution Center	Phoenix	HP	Emerging	Warehouse	390,000	The Renaissance Companies	---	2016
The Roosevelt	Tempe	ZNE	Emerging	Multi-Family	---	---	48 units	2016
Sonora Desert Passive	Tucson	PHIUS	Pre-Certified	House	2734	David Brubaker	---	2015
South Rim Maintenance & Warehouse Facility	Grand Canyon	HP	Certified	Other	---	---	---	2003
Taliesin West ZNE Retrofit - Frank Lloyd Wright	Scottsdale	HP	Retrofit	House	---	---	---	2013
Univ. of AZ, Student Recreation Center	Tempe	LEED G	Emerging	Rec. Center	---	GLHN Architecture & Eng.	---	2017
Univ. of AZ, 6th St. Residence Hall	Tempe	LEED G	Emerging	Student Housing	---	ARZ Architects	---	2017
US Fish and Wildlife federal building	Sasabe	ZNE	Emerging	Federal Building	---	Mills Design Group, LLC	---	2016
Vali Living Homes	Phoenix	ZNE	Emerging	House	---	Vali Living Homes	---	2017

\* Zero Net Energy (ZNE), Zero Energy Ready Home (ZERH), Zero Energy Districts (ZED), Passive House Institute US (PHIUS), High Performance (HP), Leadership in Energy and Environmental Design (LEED), Zero Energy Building (ZEB). More detailed program definitions and source information are on page 9.

## Zero Energy Buildings in Colorado

Project Name	City	Program*	Status	Bldg. Type	Sq Ft	Builder	# of Bldgs	Year
Adanado	Alamosa	PHIUS	Certified	House	---	Arch, Johnna Barretts	---	2013
Adrian Harris and Madeleine Fairchild	Boulder	PHIUS	Retrofit	House	---	Fuentes Design	---	2017
Agri-Urban	Ft. Collins	ZNE	Planning	Mixed use	---	Unity Homes	200	2017
Alliance Center Building	Denver	HP, LEED P	Certified	Office	---	---	---	2004
The ArtiZEN Plan	Denver	ZERH	Emerging	House	---	Newtown Builders	---	2014
Avel & Jessica Kolesnikov	Golden	ZERH	Emerging	House	---	Building their own home in Niwot	---	2016-2017
Best Buy Commercial Building Partnership	Lakewood	HP	Certified	Retail	---	---	---	2004
BigHorn Home Improvement Center	Silverthorne	HP	Certified	Retail & Office	4127	---	---	2002
Boulder Commons	Boulder	ZNE	Emerging	Mixed use	101,000	Morgan Creek Ventures	2	2016
Boulder Creek Neighborhoods	Denver	ZERH	Emerging	House	Varies	Boulder Creek Neighborhoods	---	2016
Boulder ZED Design Build	Boulder	ZERH,ZNE	Verified	House	---	Boulder ZED Design Build	7	2014
Brighton Library	Brighton	LEED	Certified	Library	---	Ransen Pittman General Contractors	---	2009
Brookfield Homes Passive House	Adams County	PHIUS	Certified	House	2,680	Brookfield Homes	---	2013
Bryan Cave LLP Law Firm	Denver	HPB	Certified	Office	---	---	---	2013
CalAtlantic Group, Inc.	Denver	ZERH	Emerging	House	Varies	CalAtlantic Group, Inc.	---	2016
Colorado College Tutts Library	Colorado Springs	ZNE	Emerging	Library	80,000	---	---	2017
Comfort by Kodiak	Silverthorne	ZERH	Emerging	House	---	Comfort by Kodiak	1	2016
Commuter Rail Maintenance Facility	Denver	HP, LEED	Not Certified	Office, Service	---	---	---	2009
Crane-Prado Residence	Denver	PHIUS	Certified	House	---	Ascent Builders	---	2012
Creek Stone Homes	Denver	ZERH	Emerging	House	Varies	Creek Stone Homes	---	2016
Denver Dry Building	Denver	HP	Certified	Mixed use	---	---	---	1998
Denver Museum of Nature and Science	Denver	LEED P	Retrofit	Museum	---	BCER Group	---	2013
Denver National Western Center	Denver	ZED	Planning	Mixed use	Varies	---	---	2016
Sunnyside EcoDistrict, CO	Denver	ZED	Planning	Mixed use	Varies	---	---	2016
Denver Water Headquarters Office	Denver	ZNE	Planning	Office	---	Ambient Energy	---	2016
David Weekly Homes	Denver	ZERH	Emerging	House	Varies	David Weekly Homes	---	2016
Durango Green Homes	Durango	ZERH	Emerging	House	Varies	Durango Green Homes	---	2016
Home	Nederland	ZERH	Emerging	House	6500	---	---	2016
Evie Garrett Dennis E12 Campus	Denver	ZNE	Emerging	Education	184,769	---	---	2010
Fort Carson	Fort Carson	ZNE, ZED	Emerging	Other	Varies	---	---	2016

## Zero Energy Buildings in Colorado (continued)

Project Name	City	Program*	Status	Bldg. Type	Sq Ft	Builder	# of Bldgs	Year
Fort Collins Utility Building	Ft Collins	LEED P	Emerging	Office	---	---	---	2016
Fort ZED	Ft. Collins	ZED	Planning	Mixed use	Varies	---	---	2016
Fossil Ridge High School	Ft. Collins	LEED S	Certified	Education	---	---	---	2005
Fuse Living	Denver	ZNE, ZERH	Emerging	House	27,534	Fuse Living	1	2016
Galbraith Builders, Inc.	Durango	ZNE, ZERH	Verified	House	Varies	Galbraith Builders, Inc.	2	2016
Green Team Real Estate	Fort Collins	ZERH	Emerging	House	---	---	---	2016
Harrington Construction LLC	Fort Collins	ZERH	Emerging	House	Varies	Harrington Construction LLC	---	2016
Infinity Home Collection	Greenwood Village	ZERH	Verified	House	Varies	Infinity Home Collection	4	2014-Present
Josephine Commons	Lafayette	ZNE	Emerging	Multi-Family	Varies	Boulder Housing Authority	153 units	2014
KB Home Colorado	Centennial	ZERH	Verified/Emerging	House	Varies	KB Home Colorado	4	2017
Kinard Core Knowledge Middle School	Ft. Collins	HP	Verified	Education	---	---	1	2006
Kodiak Enterprises, Inc.	Silverthorne	ZERH	Retrofit	House	---	Kodiak Enterprises, Inc.	1	2017
Lennar	Denver	ZERH	Emerging	House	Varies	Lennar	---	2017
Living Oak	Ft. Collins	ZNE	Emerging	Mixed use	---	Davis Davis Architects	1	2017
Lowry Redevelopment Multi-Family ZNE	Denver	ZNE	Emerging	Multi-Family	Varies	---	---	---
Mantell-Hecathorn Builders	Durango	ZERH,ZNE	Verified	House	---	Mantell-Hecathorn Builders	8	2015-Present
Mesa Verde National Park Visitors center	Mesa Verde	HPB	Emerging	Visitors Center	---	---	1	2014
Midtown Residential LLC	Centennial	ZERH	Verified	House	---	Midtown Residential LLC	1	2016
Midtown Passive House	Denver	ZERH	Emerging	House	2421	Brookfield Homes	1	2013
Mountain Solar Owner Home	Gunnison	ZNE	Verified	House	3,000	---	1	2005
National Western Stockshow Complex	Denver	ZED	Planning	Mixed use	---	---	---	2005
NREL Campus	Golden	LEED P&G	Certified	Other	---	---	6	2002-Present
NREL Research Support Facility	Golden	ZNE	Verified	Office	222,000	---	---	2010
NREL Wind Site Entrance Building (SEB)	Golden	ZNE	Emerging	Other	160	---	---	2002
The Pavilion	Ft. Collins	LEED P	Emerging	CSU Dorms	---	4240 Architecture	1	2015
Parkwood Homes	Denver	ZERH	Emerging	House	Varies	Parkwood Homes	---	2017
Passive House Apartments	Steamboat Springs	ZNE, PHIUS	Emerging	Multi-Family	---	Jeff Pullman	52 units	2016
REI Denver Flagship	Denver	HP	Retrofit	Retail	---	---	1	2000
Rehn Construction Inc	Estes Park	ZERH	Emerging	House	---	Rehn Construction Inc	---	2017
Residences at Epic On French	Breckenridge	NZE	Emerging	House	2,035	---	---	2017

## Zero Energy Buildings in Colorado (continued)

Project Name	City	Program*	Status	Bldg. Type	Sq Ft	Builder	# of Bldgs	Year
Revive North Star Plan	Ft. Collins	ZERH,ZNE	Verified	House	Varies	Philgreen Construction	40 units	2016
RMI Basalt Innovation Center	Basalt	ZED, ZNE, PHIUS	Verified/Certified	Public Assembly	15,610	JE Dunn Construction	---	2015
Salt Workshop	Montrose, Grand Lake	ZNE	Planning	Home	Varies	The Salt Workshop	2	2017
Sangre de Cristo PK-12 School	Mosca	ZNE	Emerging	Education	---	---	---	2011
Savant Homes Inc.	Timnath	ZERH	Emerging	House	Varies	Savant Homes Inc.	---	2017
SMC Construction Inc.	Aurora	ZNE	Emerging	House	Varies	SMC Construction Inc.	8	2017
Steve Schechter	Gunnison	ZNE	Self Verified	House	3,000	Steve Schechter	---	2013
Steven DeWitt Architecture & Construction	Longmont	ZERH	Emerging	House	---	Steven DeWitt Arch. & Construction	---	2017
Sunnyside EcoDistrict, CO	Denver	ZED	Planning	Mixed use	Varies	---	---	2017
Sutter Homes Co.	Durango	ZERH	Emerging	House	---	Sutter Homes Co.	---	2017
Target Energy Upgrade	Thornton	HP	Retrofit	Retail	173,000	DOE and City of Thornton	1	2013
Thrive Home Builders	Denver Metro	ZERH,ZNE	Verified	Home	Varies	Thrive Home Builders	280	2013-Present
Travelers Rest	Ft. Lupton	PHIUS	Certified	Home	5795	Mainstream Corp.	---	2016
Wayne Aspinall Federal Building & Courthouse	Grand Junction	ZNE	Emerging	Public Safety	41,562	---	---	2013
Wonderland Homes	Denver	ZERH	Emerging	House	Varies	Wonderland Homes	---	2014
Zed 2	Boulder	PHIUS	Planning	House	Varies	Fuentes Design	---	2016
4240 Architecture Inc., Denver Studio	Denver	LEED Gold	Emerging	Office	---	Sprung Construction	---	2016
6015 Waterfall loop	Manitou Springs	PHIUS, ZERH	For Sale	House	2342	6015 Waterfall loop	---	2009
8562 Monte Vista Ave.	Longmont	ZERH	Emerging	House	5800	Bob Cahn Homes Inc.	---	2016

\* Zero Net Energy (ZNE), Zero Energy Ready Home (ZERH), Zero Energy Districts (ZED), Passive House Institute US (PHIUS), High Performance (HP), Leadership in Energy and Environmental Design (LEED), Zero Energy Building (ZEB). More detailed program definitions and source information are on page 9.

## Zero Energy Buildings in New Mexico

Project Name	City	Program*	Status	Bldg. Type	Sq Ft	Builder	# of Bldgs	Year
Health Clinic, Rio Grande High School	Albuquerque	HP, LEED G	Pending	Education	2601	---	1	2017
Jefferson Green	Albuquerque	LEED G	Certified	Office	---	Jefferson Green	---	2007
NeedBased Inc.,	Taos, Santa Fe	PHIUS	Pre-Certified	House	Varies	NeedBased Inc.,	5	2017
PALO DURO HOMES	Farmington	ZERH	Verified	House	Varies	Palo Duro Homes	225	2013, 2016
Zero E Design	Santa Fe, Taos	PHIUS	Pre-Certified	House	Varies	Zero E Design	5	2017
Zero Energy Home Plans	Albuquerque	ZERH	Emerging	House	---	Zero Energy Home Plans	---	2017

\*Zero Net Energy (ZNE), Zero Energy Ready Home (ZERH), Zero Energy Districts (ZED), Passive House Institute US (PHIUS), High Performance (HP), Leadership in Energy and Environmental Design (LEED), Zero Energy Building (ZEB). More detailed program definitions and source information are on page 9.

## Zero Energy Buildings in Nevada

Project Name	City	Program*	Status	Bldg. Type	Sq Ft	Builder	# of Bldgs	Year
The Animal Foundation Dog Adoption Park	Las Vegas	HP, LEED P	Pending	Animal Hospital	---		---	2006
David Gibson Home	Reno	ZNE	Retrofit	House	2358	David Gibson Home	1	2016
Las Vegas Cyclery	Las Vegas	HP, LEED P	Certified	Retail	---	Las Vegas Cyclery	---	2013
Lloyd D. George Federal Courthouse	Las Vegas	HP	Certified	Federal Building	---	---	---	2014
Pahranagat National Wildlife Refuge visitor center	Alamo	ZNE	Verified	Public Assembly	5,000	---	---	2014

\*Zero Net Energy (ZNE), Zero Energy Ready Home (ZERH), Zero Energy Districts (ZED), Passive House Institute US (PHIUS), High Performance (HP), Leadership in Energy and Environmental Design (LEED), Zero Energy Building (ZEB). More detailed program definitions and source information are on page 9.

## Zero Energy Buildings in Utah

Project Name	City	Program*	Status	Bldg. Type	Sq Ft	Builder	# of Bldgs	Year
Breezeway House	Salt Lake City	PHIUS	Certified	House	2,778	Breezeway House	---	2012
Campbell Home	Salt Lake City	ZNE	Retrofit	House	---	---	---	2013
Capital Park Passive House	Salt Lake City	PHIUS	Planning	House	---	Capital Park Passive House	---	2017
The Chandler at Little Cottonwood Canyon	Cottonwood Heights	PHIUS	Emerging	House	5,226	Garbett Homes	1	2016
The Emery Street Project	Salt Lake City	PHIUS	Emerging	House	1,793	SLC Housing & Urban Development	1	2016
Field of Dreams Eco Community	Kearns	PHIUS	Emerging	House	Varies	Habitat for Humanity	---	2018
Garbett's Net Zero-Energy Home at Rosecrest	Salt Lake City	ZERH	Verified	House	Varies	Garbett Construction	9	2013-Present
Living Zenith #1172	Salt Lake City	PHIUS	Emerging	House	2592 to 2944	Redfish Development	5	2017
Odyssey Elementary School	Woods Cross	LEED G	Emerging	Education	84,000	Odyssey Elementary School	1	2014
The O'Mear House	Park City	LEED P	Emerging	House	3700	The O'Mear House	1	2013
Ruby House, Brach Design	Salt Lake City	ZNE, PHIUS,	Verified	House	2,714	Benchmark	---	2014
Salt Lake County District Attorney Office	Salt Lake City	ZNE	Planning	Office	---	---	---	2017
Salt Lake City Fire Station #14 & #3	Salt Lake City	ZNE	Emerging	Public Safety	---	---	2	2017
Salt Lake City Public Safety Building	Salt Lake City	ZNE	Emerging	Public Safety	175,480	---	1	2013
Scowcroft Building	Ogden	HP, LEED S	Certified	Office	104,569	Scowcroft Building	---	2006
T & T Mountain Builders	Park City	PHIUS	Certified	House	---	T & T Mountain Builders	2	2015
Summit Haus	Park City	PHIUS	Pre-Certified	House	1,869	Park City Design Build	---	2014
Tenny Residence	Salt Lake City	PHIUS	Pre-Certified	House	3,450	Tenny Residence	---	2012
Zero-Energy Plans LLC	Moab	ZNE	Emerging	6 room B&B	Varies	Zero-Energy Plans	---	2017

\*Zero Net Energy (ZNE), Zero Energy Ready Home (ZERH), Zero Energy Districts (ZED), Passive House Institute US (PHIUS), High Performance (HP), Leadership in Energy and Environmental Design (LEED), Zero Energy Building (ZEB). More detailed program definitions and source information are on page 9.

## Zero Energy Buildings in Wyoming

Project Name	City	Program*	Status	Bldg. Type	Sq Ft	Builder	# of Bldgs	Year
The Discovery Center	National Park Service	HP	Emerging	Visitors Center	21,700	---	---	2007

\*Zero Net Energy (ZNE), Zero Energy Ready Home (ZERH), Zero Energy Districts (ZED), Passive House Institute US (PHIUS), High Performance (HP), Leadership in Energy and Environmental Design (LEED), Zero Energy Building (ZEB). More detailed program definitions and source information are on page 9.



## Zero Energy Buildings Definition of Terms

**A Zero Net Energy (ZNE)** building is a highly energy efficient building (high insulation levels, energy efficient lighting, natural daylighting, efficient heating, cooling, ventilation and delivery systems) which is able to produce enough on-site renewable energy to offset the energy consumed in the building over the course of a year.

**Zero Energy Ready Home (ZERH)** program is the Department of Energy's (DOE) next step in energy efficiency above their ENERGY STAR program. Over 14,000 homes in the United States have been registered in the DOE ZERH program since 2008. A ZERH is basically an ENERGY STAR 2012 IECC home, with checklists for improving indoor air quality and water conservation and renewable energy connectivity and installation.

**Zero Energy Districts (ZED)** is where a group of buildings produces as much on-site renewable energy as they use over a course of a year. ZED's share infrastructure and resources (such as waste water heat recovery) to capture energy and increase efficiency without adding more renewable energy. "Net zero energy districts offer an incredible opportunity for cities to greatly reduce their energy use and carbon emissions while at the same time revitalizing urban neighborhoods." Chuck Kutscher, National Renewable Energy Laboratory's (NREL) Center Director for Buildings and Thermal System.

**Passive House Institute US (PHIUS)** is the only Passive House building standard which is climate, comfort and performance based requiring on-site QA/QC to be certified. Allowing affordable cost effective building solutions as a way to achieve a zero energy or zero carbon building. The Passive House is a concept for constructing super insulated, ventilated and balanced buildings which use 90% less energy than the typical building and 75% less than newly constructed buildings.

**High Performance (HP)** buildings are ENERGY STAR homes and buildings which are energy efficient and have the following eight attributes; safety and security, sustainability, accessibility, functionality, productivity, historic preservation and aesthetics if the Whole Building Design Guide (WBDG) intergraded approach is used. The WBDG assessed the voluntary standard and rating systems of high performance buildings. These buildings were basically the most efficient and advanced building for their time.

**Leadership in Energy and Environmental Design (LEED)** projects earn points in sustainable design to one of four levels of efficiency, Bronze, Silver, Gold and Platinum. LEED projects work for all types of buildings changing how buildings are planned, constructed, maintained and operated. LEED is the most widely used third party verification system for energy efficient or green buildings in the world.

**Source Information:** The Zero Energy Buildings (ZEB) on our list were located through internet searches and the following organizations; Department of Energy Zero Energy Ready Home (DOE ZERH) program, the United States Green Building Council Leadership in Energy Efficient Design (USGBC LEED), Passive House International US (PHIUS), the Net Zero Energy Coalition (NZEC) and the New Buildings Institute (NBI).