

green tour an environmental center event *e*

SAT, SEPT 28th 10:00-4:30



Photo Credit: Katherine Austin

FREE Tour of Green Homes & Businesses in Central Oregon

Thank you to our sponsors

E 2 S  L A R


EnergyTrust
of Oregon

e envirocenter.org/tour

Table of Contents

3	Welcome from The Environmental Center and The Energy Challenge
4	Thank you to our sponsors
5	Green Tour Kick-off, Fri, Sept. 27th, 7:00 @ Bend Senior Center Zero Waste (Green) Home: Bea Johnson is coming to Bend!
7	Tour Day Schedule, Sat, Sept. 28th, 10:00-4:30
8	Site #1 – Azimuth 315: Efficiency drives affordability
10	Site #2 – NWX Solar + Electric Cars: Solar powered living and driving
11	Why Your Next Car Should Be Electric
12	Site #3 – Monterey Mews Cottages: Cottage cluster creates community
14	Site #4 – Crack in the Ground: A modern home rooted in its landscape
16–17	Green Tour Map
18	Site #5 – 1930s Mill House Retrofit: Craftsman home upgraded for efficiency
19	Site #6 – Basecamp: Modern design meets density and walkability
20	Site #7 – Deschutes Growery: A budding opportunity for efficiency
21	A Better Choice for Heating Your Water
22	Site #8 – E2 Solar: Energy storage for a resilient future
23	Site #9 – Prairie Crossing: Custom-inspired homes emphasize efficiency
24	Site #10 – Three Sisters Irrigation District: Irrigation modernization and hydropower demonstration facility
25	Site #11 – Downtown Sisters ADU: Small living = green living
26	Site #12 – Cottages at ClearPine: An innovative cottage development
27–29	Green Building Directory: Your resource to get your projects started
30–31	Glossary of Green Building Terms

Dear Central Oregonian:

The Environmental Center welcomes you to the 19th Annual Green Tour!

Thirty years ago, The Environmental Center was born to advance a healthy, vibrant place to live, work and play for all of us today and for future generations to inherit. We've grown into a regional hub of environmental education, engagement, and action – practical, local action that defines and shapes this place we call home.

Why focus on better buildings? Because in Bend, buildings account for 53% of our carbon emissions. We envision a community where energy efficiency and renewable energy provide a healthy and affordable place for everyone to live. And if we're going to reduce our community's contribution to climate pollution, we must focus on our homes and businesses.

So on September 28th, neighbors across the region will welcome us through their doors to learn and benefit from their own projects and experiences. The Green Tour showcases a wide variety of green building practices, whether you're searching for a new place or want to improve your current one. You'll see real-world solutions that reduce energy use and increase solar production and renewable energy in residential and commercial buildings right here in Central Oregon.

Now, more than ever, it's important for all of us to make a change under our own roofs (or on them!)—no matter how big or small. **We hope the 2019 Green Tour inspires you to use less energy and make the shift to solar and electric vehicles, at home and at work.**

See you on the tour,



Mike Riley
Executive Director
The Environmental Center



Lindsey Hardy
Program Director
The Energy Challenge



At The Environmental Center, we're also...

Advocating for environmentally responsible policies, such as the City of Bend's Climate Action Resolution and a transportation plan for Bend that moves people, not just cars.

Embedding sustainable behaviors into the daily lives of families and businesses in Central Oregon, through programs like The Energy Challenge and the Rethink Waste Project.

Empowering youth and future leaders to create a sustainable tomorrow through hands-on classroom programs and outdoor learning.

Engaging community members in collective action and celebration, through events like the annual Earth Day Fair and Sustainability Awards.

Learn more at envirocenter.org

The 19th Annual Green Tour
is Brought to You By

E 2 S L A R



Thank You to Our Energy Challenge
Program Sponsors



Green Tour Kick-off

Zero Waste (Green) Home:

Bea Johnson is coming to Bend!

Friday, September 27th

7:00 pm - 8:00 pm with 30 minutes of Q&A to follow

@ Bend Senior Center



At The Environmental Center, we believe in the power of individual, daily actions. When these efforts become collective community initiatives, that's when real change takes place. Sustainability isn't just about how green your home, office, or school is – it's about how you live and make decisions within those spaces and beyond. We hop this evening will inspire you to reflect on your own lifestyle and habits, and provide practical solutions for living simply and reducing waste.



Since 2008, Bea and her family have produced a mere PINT of trash per year. (That's one jar, folks.) Bea has been featured on TV shows and in publications all over the world. She has empowered hundreds of thousands of people to adopt waste-free living, open unpackaged shops, and conceive reusable products.

Bea initiated a global movement. And here in Central Oregon, she'll lend a unique perspective on how this fits into our own local sustainability efforts. Why should we incentivize smaller-footprint homes in our growing community? (Less space = less stuff and less energy). Is it possible to retrofit and remodel a 1920's home and not produce an excess amount of trash?

Now more than ever, it's important for each of us to make a change under our own roofs (or on them!), no matter how big or small. It's time to waste less and live more, and we hope Bea's presentation – and the Green Tour – will be the motivation you need to step it up a notch.

Please register in advance (sliding scale, \$2-\$10/person) at: envirocenter.org/beatour

If you have questions, or if we can assist with accommodations for this event, please email ani@envirocenter.org or call 541-385-6908. There will be an ASL interpreter.



Welcome to **EFFICIENCY** Town



In Efficiency Town, every newly built home comes with an EPS™ and built-in energy savings.

Brought to you by Energy Trust of Oregon, EPS is a scoring system that rates homes based on energy use. The lower the score, the better. EPS helps smart homebuyers like you find homes that offer lower energy costs and superior comfort.



USE EPS TO FIND A HOME THAT SAVES

Talk to your builder or real estate professional about EPS, and download our Smart Homebuyer Checklist at www.energytrust.org/smarthomebuyer.

Serving customers of Portland General Electric, Pacific Power, NW Natural, Cascade Natural Gas and Avista.



green tour

an environmental center event 

SAT, SEPT 28th 10:00-4:30

ALL EVENTS ARE FREE AND OPEN TO THE PUBLIC



Get Fueled Up

Site # 1 – Azimuth 315, 2155 NW Labiche Ln, Bend,

Grab up a free cup of coffee provided by Strictly Organic Coffee Co. and pick up your tour guide.



Go on Tour

See map on page 16 or view in Google Maps.

Sites open from 10:00 –4:30, no registration required except for site #7.

Free childcare available at The Environmental Center. Must sign up in advance.

View maps and sign up forms at envirocenter.org/tour



Tour by Bike

Join the bike tour guided by Bend Bikes: Meet at Site #3 at 2:00 to visit sites 1-6 (8 miles). Bend Bikes will show you the safest ways to get there. The tour will end at Site #4.



Go Electric

Site #2 – 810 NW John Freemont

Take an electric car for a spin!

Site # 6 – 338 NW Roanoke Ave

Take an electric bike from Bend Electric Bikes for a ride!



Come Party!

Site # 8 – E2 Solar-20784 NE High Desert Ln, Bend – 5:00-7:00

Join us for the **Green Tour After Party** for live music, food, and refreshments. We'll be honoring the favorite site on the Tour with the People's Choice Award, so be sure to cast your vote

FOOD AND BEVERAGE SPONSORS:



SITE 1 Azimuth 315



2155 NW Labiche Ln, Bend – *Commercial New Construction*

Developer: Pacific Crest Affordable Housing
Designer: Jim Landin, BLRB Architects
Builder: Sunwest Builders
of Units: 50

Solar Contractor: E2 Solar
Solar Installation Size: 106.4 kW
Earth Advantage Certification: Platinum
Energy Trust of Oregon Path to Net Zero



Efficiency drives affordability

Pacific Crest Affordable Housing (PCAF) seeks to advance sustainable building in the world of affordable housing. Each of their projects involves innovative more impactful sustainability and efficiency features, and Azimuth 315 is their most sustainable building to date! Azimuth 315 offers modern, affordable living in the heart of Northwest Bend, providing a walkable location along with a level of sustainability that is almost unheard-of for affordable housing.

PCAF feels strongly, as responsible stewards of public funds, they have an obligation to both tenants and the community to build the highest quality projects they can, and by doing so provide a myriad of long-term environmental, financial, and human benefits.

Azimuth 315 uses 82% less energy than a building built to Oregon code. Because of this, they can provide 50 units for individuals and families with all utilities included. This means that families can more easily plan ahead for housing costs and don't have to sacrifice comfort and health to keep bills low.

Some other key features that make the building stand out include 388 PV panels and 16 solar thermal (water heating) panels to reduce energy costs. The Energy Recovery Ventilator system runs continuously to cycle air through the building, providing a healthy and comfortable living environment.

The project incorporates fun features such as carports with solar awnings and an indoor bicycle storage room for tenants, along with two "loaner" cruiser bikes that tenants can borrow. The parking lot is also electric vehicle charging ready, which means the electrical conduit has been run through the parking lot to make it easy to install chargers at a later time.

Make sure to ask about: How even small touches such as the stairway design contribute to the usability of the building!

WELCOME TO THE YEAR OF SOLAR + STORAGE!

Solar + storage may be a new term for many, but the 2019 Green Tour marks a transition point for solar + storage in Central Oregon and beyond. You will have a chance to see, in person, solar + storage systems that allow businesses and homeowners to have resiliency in the event of prolonged power outages and decrease their use and reliance on the utility grid.

Do you know or notice when an electric car drives by?

Similar types of battery storage systems that are now propelling over a million electric or hybrid electric vehicles are also making their way into homes and businesses across the US. Having a solar + storage system on-premise can provide a number of benefits depending on the scenario. Certainly having electricity in the event of a grid failure is one of the first things most people think of. However, homeowners on time-of-use metering schedules can benefit financially by using self-generated solar instead of higher priced grid schedules. Or for businesses, the ability to reduce peak demand charges by reducing what is required from the grid.

How about a storage system so smart it uses the weather forecast to reserve more energy as storms near?

As more battery interactive systems and technologies come online, the time is near when “mini-grids” can be used to create a neighbor-to-neighbor support system in times of need, and also assist the grid should injecting stored energy become beneficial.

Drive an electric car? Imaging not just charging your electric car from solar or the grid, but using the battery in your electric car as a conduit to use that energy to power your home. These are all the benefits that solar + storage can or will provide now and in the future.

As has been the case from the very first “Green and Solar Tour” in 2000, homeowners and businesses have been opening their doors to educate and empower our communities to the benefits and possibilities of energy efficiency, solar, and now the new age of energy storage. Also since 2000, E2 Solar has been at the front, leading the way to make it possible for everyone to benefit from solar technologies and now we’re excited to bring the advantages of solar + storage to the communities we serve. We hope you enjoy the solar + storage version of this years’ Green Tour.



SITE 2 NWX Solar and Electric Cars



810 NW John Freemont, Bend – *Solar Retrofit*

Builder: Choice One Builders
Square Footage: 1,946 sq
Year Built: 2010

Solar Contractor: E2 Solar
Solar Installation Size: 6 kW
Earth Advantage Certification: Silver



Solar powered living and driving

Scott and Sussane are life-long solar supporters. They were the second home in Oregon to be grid-tied and net-metered. Most systems that are installed today are net-metered which means the utility grid essentially serves as their "storage." When more energy is produced by the solar panels than is being used by the site at the time, it feeds into the electric grid through a bi-directional meter than can keep track of how much energy you put onto the grid and how much energy you use from the grid. They do however, also have batteries to run critical loads when the power goes out!

The solar system was installed in phases, the first when they moved in, and the second after they bought their first electric car. When the second phase was installed, they decided to install a sub-meter so that they could track how much energy their car was using. They have been tracking their usage and estimate that their cars each use about \$10/month in electricity. The batteries were the most recent addition to the system.

Scott and Sussane can't wait to share how fun it is to drive electric cars and lots of examples of why solar is the energy source of the future.

Make sure to ask about: What it's like to only own electric cars!



WHY YOUR NEXT CAR SHOULD BE ELECTRIC

Electric vehicles are, simply put, better. Quieter, Safer, Zippier. Not just better for your bank account. Just better.



Save Money

Charging an electric vehicle (EV) at home is like paying \$.72 per gallon of gas. This would save the average Oregon driver over \$1,000 a year in fuel costs alone.

Practically Maintenance-Free

With fewer moving parts, brakes that last twice as long and an oil free motor, you spend less time in the shop and more time on the open road.

New Oregon rebates

Oregon is making EVs more affordable to more of the population. Low and Moderate income households (family of 4 making <90,000) can either double the states \$2,500 rebate for a total of \$5,000 off a new EV. Not in the market for new? Income qualified residents can also get \$2,500 for a used EV purchase!

Charge it up

Most EV drivers simply plug in their car in their garage to start each day with a full "tank." Wanna go further? With nearly 1,500 public charging locations in Oregon, EV road trips are getting easier every year!

EVs cut Global Warming Emissions

Driving an EV in Oregon produces 1.3 metric tons of emissions per year compared with 4.9 metric tons from the average new gasoline powered car.

They go the distance

Most modern EVs travel 150 miles and some can go over 300+ miles. How long is your drive to work?



Learn more about the 40+ electric car options available in Oregon at envirocenter.org/goelectric or by contacting Neil at Neil@envirocenter.org, 541-385-6908 X12.

You can also check out and test drive an electric car at site # 2 in Northwest Crossing.



1909 NW Monterey Mews – New Construction

Located behind Broken Top Bottle Shop. Refer to directions on map.

Developer: Pacific Crest Group
Designer: Lai Chan, IFS Design
Builders: Sunwest Builders

Square Footage: 934 sq ft, 1 Bed, 1.5 Baths
Year Built: 2019
Earth Advantage Certification: Platinum



Cottage cluster creates community

This cottage sits in a quaint grouping of five similar-sized homes and is part of the second and final phase of this cottage development. The neighborhood is designed to keep cars separate from the homes which reduces noise and emissions within the living areas and allows for clustering of homes around shared amenities. This requires neighborhood residents to have a presence in their community and encourages interactions between neighbors which studies show lead to longer, healthier lives. In the heart of the cluster you'll find five brightly colored Adirondack chairs, one in the color of each cottage's front doors--a subtle suggestion for occupants to share time together in the common space.

When it comes to infill development within Bend's urban growth boundary, these types of cottage communities make denser housing an option while creating a sense connectedness, all at a very human scale. The Monterey Mews cottages provide walkable access to services such as to grocery stores, restaurants, medical services, a hardware store, schools, and churches.

To meet Earth Advantage certification, many things such as responsible land use, indoor air quality, and responsible material use were prioritized. Responsible material use involves techniques such as using a superior water resistant barrier, window and door sill pan flashing, and a third-party framing lumber moisture test which requires the lumber to be below the threshold that can stimulate mold growth.



OPEN THE DOOR TO ENERGY SAVINGS WITH EPS

Experience the beauty of energy efficiency at this year's Central Oregon Green Tour. You'll find homes built for quality, comfort and efficiency, with an EPS™ to prove it. EPS, brought to you by Energy Trust of Oregon, is an energy performance scoring system that gives you an inside look at the energy impact of a newly built home and how much it costs to operate.

With EPS, you can easily compare homes based on efficiency and find those that offer superior comfort and savings. Qualified homes are built to be at least 10 percent more energy efficient than required by current building codes. When you buy a home with an EPS, you know you're getting a higher level of performance.

"They all have better insulation, they're properly sealed, they have highly efficient HVAC systems and windows, so there's improved efficiency and energy-cost savings," says Scott Leonard, a senior project manager with Energy Trust. "But the overall advantage of these homes is a higher level of comfort that you don't get otherwise."

The benefits don't stop there. Leonard notes that EPS-rated homes deliver health advantages as well: "Requiring fresh air systems in EPS homes creates a healthier living environment for everyone in the home."

The Central Oregon Green Tour is a great opportunity to learn firsthand about the benefits of EPS homes. Here's a closer look at some of the key attributes you'll find when you step inside an EPS home on this year's tour:

1. An energy score that includes estimated utility costs, so you know what to expect before you buy.
2. Energy-saving lighting and efficient built-in appliances such as dishwashers and water heaters.
3. High-performance windows that help to deflect heat in the summer and retain it in the winter, with well-sealed window frames that make for a quieter home.
4. Special framing techniques that allow for extra insulation join forces with energy-efficient heating and cooling equipment to enhance comfort, improve indoor air quality and lower utility bills.
5. Tight construction helps prevent unwanted pollutants and drafts. Plus, mechanical ventilation systems bring fresh air into the home for healthier indoor air quality.



An EPS home can save you money and energy for years to come, so be sure to ask about EPS as you explore the featured tour homes, and remember to bring it up with your builder or real estate professional as your home search continues. Pick up a Smart Homebuyer Checklist on the tour to get the conversation started, and learn more about EPS at: www.energytrust.org/smarthomebuyer.

SITE 4 Crack in the Ground

EPS SCORE 0



338 NW Roanoke Ave, Bend – New Construction + ADU

Designers: Conan and Amy Doherty
Builders: The Doherty Group
Square Footage: 2,700 sq ft, 4 Bed, 3.5 Baths
Year Built: 2018

Solar Contractor: Sunlight Solar
Solar Installation Size: 11 kW
Earth Advantage Certification: Platinum



A modern home rooted in its landscape

This home was built into its surrounding landscape, rising from a crack in the ground. The entire back side of the house is buried into the earth, which proved difficult during excavation with a rocky build site and required extra structural engineering to design a retaining wall. While this makes the most of the challenging topography, it also takes advantage of the ground's natural coolness in the summer and heat in the winter.

The advanced framing on this home, which consists of 2x4 staggered studs and 2x8 top and bottom plates, allows for increased insulation in the wall cavity. Since the studs are offset and don't directly connect the interior and exterior walls, there is less thermal bridging. Since indoor air quality is a priority in tightly sealed homes, this home uses a spot ERV, low-VOC natural paints and finishes, and formaldehyde-free materials to ensure they have healthy and safe indoor air.

This home produces as much energy as it uses with a 11kW solar installation. To make this possible, the home uses super-efficient electric appliances including a ductless heat pump for heating, a heat pump water heat for hot water needs, and 100% LED lighting.

What they know after living there since March 2019: *"We love the consistent temperature and the lack of sound from the ADU below. Being tucked into the landscape, it's quiet and feels removed from the hustle of Portland Avenue."*





Zero Energy Homes

COST LESS TO OWN

HEALTHIER AND MORE COMFORTABLE

THE HOMES OF THE FUTURE - AVAILABLE TODAY

LEARN MORE AT THE ZERO ENERGY PROJECT

- A NON-PROFIT EDUCATIONAL ORGANIZATION



zeroenergyproject.org

Photo Credit: Solaire Homebuilders

green tour an environmental center event



SITE 1 Azimuth 315 Affordable Housing
 2155 NW Labiche Ln, Bend
Fuel up for your journey
 Free coffee & tour guide pick up
 11:00 – Meet to tour sites 1-8
 by bike (15 miles)

SITE 2 NWX Solar + Electric Vehicles
 810 NW John Freemont, Bend
Test drive electric cars

SITE 3 Monterey Mews Cottages
 See Map for Directions

SITE 4 Crack in the Ground
 338 NW Roanoke Ave, Bend

SITE 5 1920s Mill House Retrofit
 225 NW Hunter Pl, Bend
Test ride an electric bike

SITE 6 Basecamp
 55 SW Wall St, Unit 14, Bend

PRESENTING 12 SITES PACKED WITH GREEN AND SOLAR FEATURES

SAT, SEPT 28th 10:00-4:30

envirocenter.org/tour



Carpool on the Green Tour

Post a trip for others to join at getthere.rideamigos.com or look for someone else's carpool by searching for 2019 Green Tour in events.

Tour by bike

Meet at the Site #3 at 2:00 to tour sites 1-6 by bike with Bend Bikes (~8 miles) with optional ride to after party.

More info at envirocenter.org/tour.

- SITE 7** Deschutes Growery
American Lane, Bend, OR
- SITE 8** E2 Solar + Storage
20784 NE High Desert Ln, Bend
- Green Tour After Party and People's Choice Award**
5:00-7:00 – Live music, food, kombucha, beer

- SITE 9** Prairie Crossing
4149 SW Coyote Ave
- SITE 10** Three Sisters Irrigation District
68000 Hwy 20, Sisters
- SITE 11** Sisters ADU Infill
340 S Spruce St, Sisters
- SITE 12** Cottages at ClearPine
1126 N Wildflower Lane, Sisters

SITE 5 1930s Mill House Retrofit



225 NW Hunter Pl, Bend — *Retrofit + Solar*

Year built: 1935

Home Performance Contractor: DIY Project

Solar Contractor: Sunlight Solar

Solar Installation Size: 5.9kW

Craftsman home upgraded for efficiency

When Kari bought her home in 2004, she immediately went to work making energy-saving upgrades, initiating and completing many of the projects herself. Her first project was adding a Solatube to her bathroom. This had the added bonus of being able to incorporate a bathroom fan so she not only brought in natural daylighting, she also added ventilation that would improve the overall indoor air quality of her home.

Next up, she redid the roof and replaced her oil furnace with a 96.6% efficient gas furnace. With homes built before the 1980s, asbestos-containing vermiculite insulation is always a concern. The asbestos insulation was sucked out when the siding was redone and Ecofoam rigid insulation was added.

Many other upgrades have also been made such as a tankless water heater and high efficiency Sierra Pacific windows which perfectly match the style of the home.

This craftsman home got a 21st century touch with the addition of solar panels last year. After going through a Historic District review process, 20 solar panels now adorn the roof and power this home. Kari's family also embraces active and electric transportation with an electric cargo bike and a Nissan LEAF.

Make sure to ask about: The solar lights in the kitchen!

BEND BIKES
Getting Bend on bikes
for everyday riding.

Join us for our next community ride:
Holiday Lights Ride: December 14th

www.BendBikes.org



55 SW Wall Street Unit 14, Bend — New Construction + ADU

Developer: Project^
 Designer: Corey Martin, Hacker Architect
 Builder: Pacific Construction

Square Footage: 3 Bedrooms, 4 Baths, 2295 Sq Ft
 Year Built: 2019
 Earth Advantage Certification: Platinum



Home for the modern explorer (who loves to walk)

Basecamp is an urban townhome development based on modern design and walkability. The 25 townhomes are located in arguably one of the most walkable locations in town: close to downtown, one block from the Deschutes River and Box Factory, and minutes on foot to the Old Mill.



Each townhome has an attached ground-floor ADU which affords the opportunity to bring even more housing options and density into the area. Shared amenities such as a central outdoor area with dining area and a fire pit reduce the amount of space each unit requires—not to mention the reduction in the amount of material things that each home would have to own to build out their own back yards.

Large floor to ceiling windows and skylights give natural light in all interior spaces. A beautiful covered deck expands the living space. With a nod to Bend's history as a lumber town, lots of natural wood accents are used.

The total combined utility bills for gas and electric are estimated to be about \$70 per month. This homes carbon footprint is 33% smaller than a similar size home in Oregon.



Helps us get The Environmental Center's Kansas Avenue Learning Garden ready for winter. Coffee, juice, snacks and tools provided. Family friendly.

Questions? denise@envirocenter.org 541.385.6908 x14

SITE 7 Deschutes Growery



American Lane – (Address will be disclosed upon signing up for a tour spot)

Lighting Contractor: Smart Grow Technologies Solar Installation Size: 56.4 kW + 54 kW

Solar Installer: Advanced Energy Systems

A budding opportunity for efficiency

RSVP: Tours of up to 12 people at 10:30, 12:00, 2:00, 3:30. Be prepared to present photo ID. Envirocenter.org/growtour.

Deschutes Growery is shining a light on the opportunities that exist for the cannabis industry to shift to more sustainable practices. They switched out the hot and inefficient high-pressure sodium lights and are now cutting their energy use with 100% LED lighting. Unlike many growers, they are using LEDs for all growth stages of the plant with optimized lighting wavelengths for different stages of growth. They are saving \$192,000 per year and this doesn't even account for the convenience and replacement costs of new bulbs because LEDs last so much longer.

Because their LED lights produce minimal heat, Deschutes Growery has been able to put the lights much closer to the plants as part of their innovative mobile racking system which allows for a high level of biodiversity. With this high level of biodiversity, there is an extra layer of complexity to get the HVAC design done correctly.

In addition to this, they are producing solar energy on site with a 56.4 kW solar installation that they are in the midst of doubling it this fall. They have worked with the building owners to coordinate the installation and be a partner with them in their commitment to sustainability.

Make sure to ask about: How they deliver their product to retailers (hint: it's a zero emissions vehicle!).



**Innovative Sustainable
Buildings**



**Azimuth Affordable
Housing Apartments**
Northwest Crossing

Learn More at:
WWW.SUNWESTBUILDERS.COM
PHONE 541-548-7341
PO BOX 489
REDMOND, OR 97756
CCB #59850

A BETTER CHOICE for Heating Your Water

A heat pump water heater is a smart upgrade from your standard electric water heater. It delivers the same reliable supply of hot water while saving up to 60% on your water heating costs. And that means you'll be saving money for many years to come.

How It Works

A standard electric water heater uses more energy than a refrigerator, dishwasher, clothes washer and dryer combined. A heat pump water heater uses electricity differently — moving heat rather than generating it, so you use 2-to-3 times less energy, and save more money.

Save Money

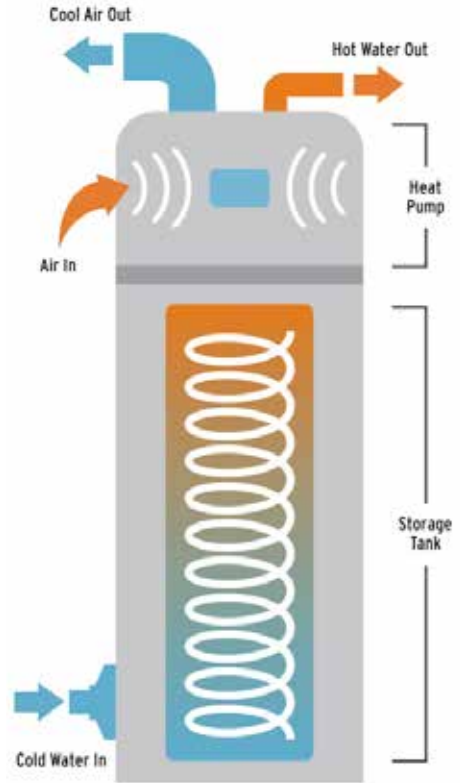
Compared to a standard electric water heater, a heat pump water heater uses 60% less energy. That can save you up to 10% on your energy bill — about \$3,500 over the life of the water heater.

Get More Control

You can select a specific water temperature, choose different operating modes depending on demand, even set it to "vacation" when you're gone.

Be More Efficient

Heat pump water heaters are designed to be energy efficient and good for the planet. By cutting electricity use by up to 60%, a heat pump water heater has a direct effect on reducing greenhouse gas emissions.



HOW GOOD OF A DEAL?

Top of the line 50-gallon units start at \$799 which is already \$500 off due to upstream incentives! There are even more ways to save that can add up to an even better deal:

- ✓ CEC and MSE customers may also be eligible for an additional \$500 rebate!
- ✓ Moderate income Pacific Power customers can qualify for an additional \$350 when installed by a Savings Within Reach installer.
- ✓ Learn more about this HOT deal at [Envirocenter.org/HPWH](https://envirocenter.org/HPWH)

SITE 8 E2 Solar + Storage



20784 NE High Desert Ln, Bend — *Commercial New Construction*

Builder: Empire Construction

Year Built: 2019

Solar Contractor: E2 Solar

Solar Installation Size: 33 kW

Battery Capacity: 12 kWh

Energy Trust of Oregon Path to Net Zero

E2 Solar + Storage

After volunteering on the first Green Tour in Central Oregon, Kelli and Mike packed up and moved to Bend to live off-grid. They spent three years making their off-grid, straw bale home a reality. It became clear to their friends and community that they were passionate about this work and after hearing “You should start a business!” enough times, in 2005, they did just that.

When E2 was looking for a new building, they faced a myriad of challenges. Bend just doesn’t have enough small commercial spaces, especially for those needing a small office plus warehouse, but if you’re looking at building, banks and lenders don’t really focus on buildings of this size. Kelli and Mike were fortunate to have the ear of their builder who was also their longtime landlord who worked with them to build a space that is on track to be a zero energy building.

They have an advanced Sonnen battery system that balances the loads from the building with the solar produced on the roof. This allows them to not only operate their building directly off the solar during the day, but seamlessly switch over the batteries when the sun or grid goes down. The system has been able to operate independent of the grid for 95% of the time that they have been in the building! The battery system can also be programmed for time of use so that the system doesn’t buy from the grid at more expensive times (we don’t have time of use pricing here Oregon). Lastly, the system serves as back-up, so if the power goes out, they can still run critical loads and keep the building operating, and in a natural disaster, serve as a neighborhood hub for things such as charging phones.

Make sure to ask about: You can ask Mike just about anything when it comes to solar and we bet he’ll have an answer for you!





4149 SW Coyote Ave, Redmond — New Construction

Located directly behind Ridgeview High. See directions on map.

Designer: Central Oregon Building Company

Year Built: 2019

Builders: Central Oregon Building Company

Earth Advantage Certification: Gold

Square Footage: 2,065 sq ft, 3 Beds, 3 Baths



Custom-inspired homes emphasize efficiency

Central Oregon Building Company builds all of its homes with an Earth Advantage certification regardless of the price points. Building Efficient homes at scale requires commitment from the earliest point of design and COBC has been able to do this as they are the developer, designer, and builder. They wanted to create something truly unique for Redmond—the community that they call home.

Prairie Crossing is currently slated to be a development of 80+ Earth Advantage certified homes with plans for future phases. The community is built around a neighborhood park and is directly behind Ridgeview High. It will soon be walkable to more services with plans for a new mixed-use development in the works that will have a brewery, shops, and a food hall.

The tour will visit one of the first homes in this new community. Some of the efficiency features in this home include R-49 insulation in the ceiling, an envelope sealed to 2.85 ACH (@ 50 Pascals), and a tankless water heater. Adding a 220 outlet in the garage is an option to add electric car charging.

Make sure to ask about: The builders' inspiration for this project.

REPAIR CAFÉ

**CONNECTING PEOPLE WITH
BROKEN STUFF WITH PEOPLE
WHO LIKE TO FIX THINGS**

MON, OCT. 21ST, 5:30-7:30

@ REDMOND LIBRARY

MON, NOV. 18TH, 5:30-7:30

@ BEND HABITAT RESTORE



SITE 10 Three Sisters Irrigation District

68000 Highway 20, Bend OR

Look for The Enviornmental Center flag of Highway 20.

Hydro Capacity: 4.83 million kilowatt hours

Energy savings: 9 million kilowatt hours

Water Conserved: 13,000 gallons of water/ minute

Irrigation modernization and hydropower demonstration facility

Irrigation modernization is the term used for a suite of improvements that can be made to aging irrigation infrastructure. Open canals are piped which increases water deliver to farms and ranches, improves stream flow, and helps restore fish habitat which not only saves water, but affords the opportunity to also produce clean hydropower.

Three Sisters Irrigation District (TSID) has completed 92 percent of its irrigation modernization project. They've piped 59 of their 64 miles of open canal and will finish this project in the next year.

The energy and water conservation statistics of this project are astounding. The piping alone conserves over 13,000 gallons of water per minute during the irrigation season—water that stays in streams for fish and wildlife. By removing pumps throughout the district, Three Sisters also is saving 9 million kilowatt hours of energy. This equates to over half a million dollars in savings each year for TSID's farmers.

When it's fully operational, Three Sisters' hydro capabilities will generate nearly 5 million kilowatt hours of clean energy. That's enough energy to power almost 380 homes in the area.

The Watson hydropower demonstration facility that you'll tour is a critical new phase for their work and will give local farmers and ranchers the opportunity to see real-life examples of hydro equipment that could be implemented on their opportunities.

Make sure to ask about: Their innovative new fish screens.



SITE 11 Sisters ADU Infill



340 S Spruce St, Sisters — *New Construction ADU*

Designer: Ryan Miyahira

Square Footage: 724 sq ft, 1 Beds, 1 Bath

Year Built: 2019

Earth Advantage Certification: Platinum



Small living = green living

The owner, Indigo used to work in the green building industry and one of her previous research projects involved a life cycle assessment of different types of construction designs and methods to see which had the biggest impact on greenhouse emissions and environmental impacts over the entire lifecycle of a home. The findings? The size of the home has the largest impact on how much energy is used during the life of the building – and the energy use during the building's occupancy drives the the largest component of the environmental footprint. So when it came to her own project, she decided to embrace a smaller space-efficient home and move out of her house and build an ADU on her property.

She took special care to make sure that even though she was going to be in a small space, it was designed to still feel spacious and functional. The design also made sure to prioritize the best practices for the building envelope: limiting the number of penetrations through the walls, upgrading insulation in the ceiling to R-60, and using high efficiency windows.

This ADU was built solar ready which means that the building was designed with the future installation of solar panels in mind. This means that the building's orientation and roof line has been assessed for effective solar panel placement and has no penetrations or obstructions on that side of the roof. Conduit is run from the roof to the electric panel and space in the panel has been designated for solar.

Make sure to ask about: Natural ventilation – no need for summer time air conditioning.

Make sure your next home is an

Earth Advantage

certified home.



earthadvantage.org

SITE 12 ClearPine Cottage: Arctic Willow



1126 N Wildflower Lane, Sisters – *New Construction*

Developer: Peter Hall, 3 Sisters Partners LLC
Designer: Katherine Austin
Builders: Tye Warren, Apple Construction

Square Footage: 1,250 sq. ft, 2 Beds, 2.5 Baths
Year Built: 2019
Earth Advantage Certification (pending):



An innovative cottage development

60 years ago, the doors were shuttered on a 50-year old lumber mill on this site. After a fire, brownfield site designation, a long abandonment, and eventual remediation, it is now home to the ClearPine community. This welcoming cottage is part of a cluster of cottages, all designed to use less square footage of indoor living space, and take advantage of a beautiful common area, complete with a community garden. These cottages are within easy walking distance to all necessary services in downtown Sisters and will soon be home to a 1 acre community park.

The cottages in the development range in size from 1004 to 1250 sq ft. All of the cottage designs were a conscious decision to create right-sized homes to meet a need for greater affordability and use less land and building materials. The small spaces are as flexible as possible for multiple uses and are oriented for functionality and privacy. Two master suites afford opportunities for multi-generational living and aging in place.

Each home will be Earth Advantage certified which means that they will be 20% more efficient than code. Energy Star appliances are used and heat pumps provide efficient heating and cooling. Since hot water can account for up to 20% of a home's energy use, water runs are central and short, decreasing hot water waste. Water Sense faucets and toilets are used, furthering decreasing energy and water demands. Low VOC interior paints and sealants and hard surfaced floors in high trafficked areas help to improve the indoor air quality of the home and a heat recovery ventilator provides fresh air.

Make sure to ask about: Their tree preservation plan and habitat restoration partnership with Upper Deschutes Watershed Council and how the development team worked with City of Sisters to re-write their cottage code.

GREEN BUILDING DIRECTORY

ENERGY EFFICIENCY AND HOME PERFORMANCE

Bend Heating

Phone: 541.382.1231
Contact: Randall Marchington
Email: info@bendheating.com
Web: bendheating.com



Founded in 1953, Bend Heating & Sheet Metal is the oldest air conditioning and heating company in Central OR. We get the job done right no matter what. Your HVAC system is one of the biggest home investments you'll make so we help you choose wisely with our top-quality products.

Central Electric Cooperative

Phone: 541.312.7742
Contact: Ryan Davies
Email: rdavies@cec.coop
Web: cec.coop



Central Electric Cooperative serves over 34,000 accounts in Central Oregon. CEC has 9 programs specific to residential energy efficiency, including low income and no-cost offerings. We promote, educate and assist our members in meeting their energy efficiency goals and saving kilowatt-hours.

Earth Advantage

Phone: 503.968.7160 ext. 46
Contact: Matt Douglas
Email: mdouglas@earthadvantage.org
Web: earthadvantage.org



Earth Advantage is a nonprofit who accelerates the creation of better buildings. We provide knowledge to building professionals and information to consumers through certification, research, education, and product development to move the building industry towards more sustainable practices.

Energy Trust of Oregon

Phone: 1.866.368.7878
Email: info@energytrust.org
Web: energytrust.org



Energy Trust of Oregon is an independent nonprofit organization dedicated to helping utility customers benefit from saving energy and generating renewable power. Our services, cash incentives and energy solutions have helped participating customers of Portland General Electric, Pacific Power, NW Natural, Cascade Natural Gas and Avista save on energy bills.

GreenSavers

Phone: 541.330.8767
Contact: Taylor Mays
Email: taylor.mays@greensaversusa.com
Web: greensaversusa.com



GreenSavers takes a whole-home approach to find and fix issues concerning comfort, energy efficiency, and safety while offering excellent customer service and a fair price. GreenSavers completes HVAC, insulation, and window projects in-house, and helps clients file incentive paperwork.

Zero Energy Project

Contact: Joe Emerson
Email: Joe@zeroenergyproject.org
Web: zeroenergyproject.org



Zero net energy homes produce as much energy as they use. They are the homes of the future - available today. They improve your family's health and comfort while they cost less to own than standard homes. Get your life on the path to zero today. Learn more at our non-profit educational website - zeroenergyproject.org

Central Oregon Building Co

Phone: 541.903.0002
Contact: Chantel Fosberg
Email: chantel@cobuildingllc.com
Web: COBuildingLLC.com



COBC builds quality homes at a range of price points, all of which are Earth Advantage Gold certified to offer home buyers peace of mind and great savings. They do this by passionately pursuing innovation, efficiency and quality craftsmanship in every home we build.

SunWest Builders

Phone: 541.548.7341
Contact: Kevin Link, Pre-Construction Services
Email: kevinl@sunwestbuilders.com
Web: sunwestbuilders.com



SunWest Builders specializes in a broad range of bid and negotiated building projects. We are experienced with building green and sustainably designed buildings and have built a number of Earth Advantage and Leadership in Energy and Environmental Design (LEED) certified projects.

GREEN BUILDING DIRECTORY

DESIGNERS AND BUILDINGS

Jim Guild Construction

Phone: 541-388-3569
Contact: Jim Guild
Email: guildbuild@gmail.com
Web: saginawsunset.com



The Saginaw Sunset community is about the home building envelope, energy efficiency, renewable energy and air quality. It's about water conservation, harnessing solar power and preserving old-growth trees within the community. And it's about being an urban infill development – staying in the heart of Bend instead of expanding the City's Urban Growth Boundary (UGB).

Stemach Design + Architecture

Phone: 541.647.5661
Contact: Stacey or Rachel Stemach
Email: stacey@stemachdesign.com
rachel@stemachdesign.com
Web: stemachdesign.com



Stemach Design implements thoughtful, innovative design based on the core values of economic, environmental and equitable sustainability. We are dedicated to projects embodying careful, coordinated designs that have positive impacts on each project's surroundings.

INTERIOR AND BUILDINGS

Miller Lumber

Phone: 541.382.4301
Web: mlumber.com



The Miller Lumber Company, supplying lumber and building materials to all of Central Oregon since 1911.

Solar Light Inc.

Phone: 541.306.4141
Contact: Brennan, Melody, and Ann
Email: Ann@solarlight.me
Web: solarlight.me



Locally owned & operated with over 12 years of bringing light to Central Oregon homes & businesses with Solatube Tubular Skylights. Also offering Solar Star Attic Fans & Solatube whole house fans.

SOLAR

E2 Solar

Phone: 541.388.1151
Email: sales@e2solar.com
Web: www.e2.solar



E2 Solar is a women-owned, small business dedicated to providing central Oregon the very best in clean, sustainable energy. Our custom-designed solar systems offer a reliable and affordable energy solution for any home or business.

Elemental Energy

Phone: 541.316.5786
Contact: Laurel Hamilton
Email: hello@elementalenergy.net
Web: elementalenergy.net



Elemental Energy specializes in creative, high quality beautiful solutions to your energy needs. Locally owned and operated, we design and install turnkey solar electric systems for residential and commercial clients throughout Oregon and Washington with offices in Bend and Portland.

Sunlight Solar

Phone: 541.322.1910 ext. 301
Contact: Sun Nguyen
Email: joe@sunlightsolar.com
sean@sunlightsolar.com
Web: sunlightsolar.com



With over 20 years of solar installation experience in Central Oregon, we bring you high-quality, turn-key installations for residential and commercial projects. We are passionate solar advocates that take pride in supporting our community's transition toward a renewable energy future.

GREEN BUILDING DIRECTORY

TRANSPORTATION

Bend Electric Bikes

Phone: 541.410.7408
Contact: Courtney Van Fossan
Email: courtney@bendelectricbikes.com
Web: bendelectricbikes.com



Since 2008, BEB has been selling, repairing and converting electric and cargo bikes that help locals get around town. Whether you ride for fun, as your primary mode of transportation, or for the planet, Bend Electric Bikes can help you learn more about what's possible with an e-bike.

Smolich Nissan

Phone: 541-749-1016
Contact: Calvin Stevens
Email: cstevens@smolichmotors.com
Web: smolichnissan.com



Smolich Nissan is a family owned business and has been serving the Bend community since 1968. We feature best in class fuel efficiency vehicles and the 100% Electric Nissan LEAF.

Forth

Phone: 503.724.8670
Contact: Zach Henkin
Email: zachh@forthmobility.org
Web: forthmobility.org



Forth is a nonprofit that works to advance electric, smart, and shared transportation in the Pacific Northwest and beyond through innovation and industry development; demonstration and pilot projects; policy advocacy; and consumer engagement.

Go Team Kia

Phone: 541.550.5555
Contact: Brady Allison
Email: ballison@goteamkia.com
Web: goteamkia.com



With four EV models currently available between Kia & Hyundai, the company hopes to have 44 electrified models (including hybrids, plug-in hybrids and fuel-cell) on the market by 2025. This will reportedly include an all electric luxury sedan to be sold under the Genesis brand in 2021.

GREEN REALTORS

Mike Tucker

Phone: 503.939.6155
Contact: Mike Tucker
Email: mike@highdesertdwelling.com
Web: highdesertdwelling.com
Agency: Windermere Real Estate



I specialize in GREEN real estate, home technology, great design and unique spaces. I delight in helping my clients find value and those hard to find special homes.

Certifications: GREEN; Earth Advantage Broker

LENDING

Craft 3

Phone: 888.231.2170
Contact: Tawny Reader
Email: HomeEnergy@Craft3.org
Web: Craft3.org/HomeEnergy



Craft3 is a regional nonprofit lender that strengthens the resilience of businesses, families and nonprofits, including those without access to traditional financing. We lend to growing and start-up businesses, and homeowners upgrading energy features or failing septic systems.



GLOSSARY



Energy Performance Score (EPS)™, brought to you by Energy Trust of Oregon, is an energy performance score that helps you assess a home's energy consumption, energy costs, and carbon footprint.

FSC Certified Wood Forest Stewardship Council certification tells whether a wood product is from a forest that is sustainably managed, including protecting fragile ecosystems, preventing illegal logging, and restricting clear-cutting.

Graywater Household wastewater that doesn't contain sewage and can be reused for toilet flushing. Graywater typically comes from showers, lavatories, and clothes washing machines.

Heat island effect The tendency of large areas of roofs, asphalt, concrete and paved surfaces to absorb the heat, making urban areas considerably hotter than nearby rural areas.

Heat pump water heater A tanked water heater that uses 60% less energy than an electric hot water heater by using a heat pump to move heat from the surrounding air into the tank.

Indoor air quality The level of air pollutants inside a building. Indoor air pollution sources include certain building materials and furnishings; certain cleaning and personal care products; dust mites; pet dander; mold; radon; pesticides; and outdoor air pollution. Inadequate ventilation and high humidity levels can also contribute to indoor air quality problems.

Infill development Building on empty or underutilized lots in cities or older suburban areas, instead of building in a previously undeveloped area.

Infiltration The uncontrolled movement of outdoor air into a building through cracks and other defects around plumbing, floor cavities, soffits, chimneys, ducts. Accompanied by an equal outflow of air from indoors to the outdoors.

Insulated Concrete Form (ICF) Plastic foam shaped into hollow blocks, panels or planks and used as a form to create a concrete wall. After positioning the foam forms, rebar is typically inserted into the cavities to reinforce the walls, and then concrete is poured in. Once the concrete cures, the foam remains in place to insulate the walls.

Insulation A material that has a high resistance to heat flow. Used to keep a home comfortable and reduce the energy needed to heat and cool the home.

Inverter A device used to convert DC electricity (such as that produced by solar panels) into AC electricity to power standard household equipment and appliances.

Kilowatt-hour (kWh) A unit of electric energy equal to 3600 kilojoules or 3412 BTUs. (relates to usage).

LED light bulb LEDs (Light emitting diode) are extremely long-lasting (up to 25 years) and are 85% more efficient than standard bulbs.

Lighting controls System or devices used to manually or automatically dim electric lights, or switch them on or off. These devices, which include dimmers, timers, motion sensors and photocell controls, provide convenience and energy savings.

Low-e (low-emissivity) window A very thin metallic coating on window glazing that allows daylight to enter a building but reduces the flow of heat. The appropriate type of low-e glazing for a home will depend on the climate and the window's orientation.

Accessory Dwelling Unit (ADU) A secondary house or apartment with its own kitchen, living area and separate entrance that shares the lot of the primary, larger house. Also known as granny flats and mother-in-law suites.

Advanced framing Technique that significantly reduces the amount of material used to frame a building. Includes strategies such as studs placed 24 inches on center; fully insulated corners; insulated headers; engineered wood products; and roof or floor trusses.

Annual Fuel Utilization Efficiency (AFUE) Widely-used measure of the fuel efficiency of a heating system. Furnaces sold in the United States must have a minimum AFUE of 78%. High ratings indicate more efficient equipment.

Air Changes per Hour (ACH) The total volume of air in a space that is exchanged over an hour. Used to measure how 'leaky' a building is.

Battery Storage Storing energy, often by a solar system, for later consumption such as after sundown, during energy demand peaks, or during a power outage.

Blackwater Household wastewater containing human waste and waste from a dishwasher.

Blower Door Test Used to measure air tightness and identify areas of air infiltration in a home. This multi-part system uses a large fan that fits in your door frame to create negative pressure and pull air through your home.

Brownfield A former industrial or commercial site that is no longer in use.

Building envelope A building's shell, including exterior walls, windows, doors, roof and the bottom floor.

Conditioned space An enclosed space supplied with conditioned air from a heating and/or cooling system.

Daylighting Utilizing light from the sun to help illuminate a room.

Double-glazed window A window with two panes of glass separated by an air space. Compared to single-glazed windows, double-glazed windows significantly reduce heat and sound transmission.

Ductless Heat Pump An efficient heating and cooling system that doesn't require any ductwork. Also called "mini-splits" these systems have an outside heat pump with 1 or more inside units, or heads, that can be located throughout the house.

Energy Recovery Ventilator (ERV) A ventilator that recovers energy from the exhaust airstream and transfers it to the incoming airstream. Heat is transferred from the warmer to the cooler airstream and moisture is transferred from the wetter to the dryer airstream. **See Page 19.**

ENERGY STAR® A program sponsored jointly by the U.S. Environmental Protection Agency and the U.S. Department of Energy that promotes energy-efficient products, homes and technologies for consumers and businesses. Products and new homes are ten to thirty percent more efficient than their conventional counterparts.

EnergyGuide label A yellow sticker required by U.S. law on common new household appliances. The label provides information on the amount of energy the appliance will use in one year.

Net metering This is an agreement with your utility that allows you to feed excess directly to the utility grid any electricity that is generated in excess of your demand. This causes the electricity meter to spin backwards and give you a credit for the excess energy that you can later use to offset your electricity demand.

Net Zero or Zero Energy Building A building that creates at least as much energy as it uses. Homes are designed to take advantage of passive solar design, and focus on reducing energy demand with super-insulation and an air-tight envelope. On-site electricity generation, such as photovoltaic (PV or solar) panels, is essential to achieve net-zero energy use.

Off-grid solar A solar electric system that combines photovoltaic panels, an inverter, and batteries to function independently of the power grid. The system must be able to produce and store all of the energy a home needs even on cloudy days and at night.

Passive solar design A building specifically designed to collect and store the sun's heat, and release that heat into the interior spaces to help warm the rooms naturally. Depending on the design and climate, passive solar heating can be the sole source of heat for the building or can be supplemented with a heating system.

Phantom Load The small amounts of electricity consumed by many appliances and equipment—such as TVs and stereos with remotes, ovens with digital clocks, cell phone chargers—even when they're not in use.

Photovoltaic (PV) or Solar system Converts sunlight directly into electricity. Consists of solar panels made up of PV cells and in inverter. Systems range from small rooftop systems on residences to solar farms that produce enough energy for thousands of homes.

Polyvinyl chloride (PVC) Also known as vinyl. A family of plastics with a wide range of forms and uses. PVC is used extensively in building products, consumer goods and industrial applications. PVC contains or releases many dangerous chemicals and there is no safe way to manufacture, use or dispose of PVC.

Post-consumer recycled content Products that have been used and discarded by a consumer and are then reprocessed and recycled as raw material for a new product.

Rainwater harvesting Collecting rainwater from a catchment area, such as a roof, and storing it in cisterns or other containers to use for watering a garden or other purposes.

Rapidly Renewable Materials Natural and non-petroleum-based building materials that are made from agricultural products that are typically harvested within a 10-year or shorter cycle. i.e. bamboo, cork, straw bales.

Reclaimed material A material that's put to a new beneficial use after it's no longer needed for its original use, such as wood removed from an abandoned building and used to construct a new building.

R-value A measure of a material's resistance to the passage of heat through it. The higher the R-value, the more effective the material is as insulation.

SIPs (Structurally Insulated Panels) Construction material usually made out of an insulating foam core sandwiched between two structural boards (the material of the boards varies). They combine many building components such as studs, insulation, and vapor and air barriers.

Smart thermostat A device that can be used with home automation and is responsible for controlling a home's heating and/or air conditioning. These often can be controlled remotely and adjust based on occupancy and weather forecasts to save energy.

Solar heat gain coefficient (SHGC) An indication of how much of the sun's heat will enter through a window. An SHGC of 0.40, for example, means that forty percent of the sun's heat gets through the window.

Solar thermal or Solar water heating systems The use of concentrated sunlight to heat or preheat water for domestic use and /or space heating. A closed system of Flat-plate or Evacuated-tube solar collector moves hot water from roof to store in a tank in the building.

Stack effect The air flow established in a building from air infiltrating low and exiting high. The pressures created are greatest at the highest and lowest points in the building.

Stormwater retention Generally refers to the collection of stormwater, with no discharge point. Water is collected and then is allowed to percolate into the ground or evaporate.

Stormwater runoff Water that flows off of buildings and paved surfaces and over land during a rainstorm.

Tankless water heater A water heater that saves energy by heating water as it is needed, rather than storing hot water in a tank. Also known as an instantaneous or on-demand water heater.

Thermal bridge A highly conductive material within a building envelope, such as a steel or wood framing member, that allows heat to bypass the insulation.

Thermal mass The ability of a material to absorb and retain heat. Materials with a high thermal mass, such as rocks, earth and concrete, have the capacity to absorb heat during the day and release it when temperatures cool.

Solatube A circular skylight that's much smaller than typical skylights, designed to illuminate interiors with daylight while keeping out excessive heat. It consists of a small, roof-mounted dome attached to a tube lined with reflective material. Light is reflected down the tube, and is transmitted into the room through a translucent ceiling fixture.

U-factor Indicates how easily heat will pass through a construction assembly, such as a window. The lower the U-factor, the lower the rate of heat flow so the more efficient the material is.

Ventilation The movement of air through an area for the purpose of removing moisture, air pollutants, or unwanted heat.

Volatile organic compound (VOC) A class of organic chemicals that readily release gaseous vapors at room temperature. VOCs occur naturally in many materials, and can also be manufactured and added to materials and products. VOCs are released ("offgassed") into a home by common furnishings and building materials, including many types of particleboard, paint, solvents, carpets and synthetic fabrics.

Xeriscape Landscaping design that conserves water by using native or drought-tolerant plants, mulch, and limited or no irrigation.

Solar + Storage

See the power of resilience

2019 GREEN TOUR MUST SEE STOPS

SITE 8: E2 SOLAR - Solar + Storage

SITE 1: AZIMUTH 315 - Solar + Carports

SITE 2: Residence - Solar + Storage



E2 Solar, Inc.

20784 High Desert Lane
Bend Oregon 97701

541-388-1151

www.e2.solar

A women-owned small business | CCB#198347

