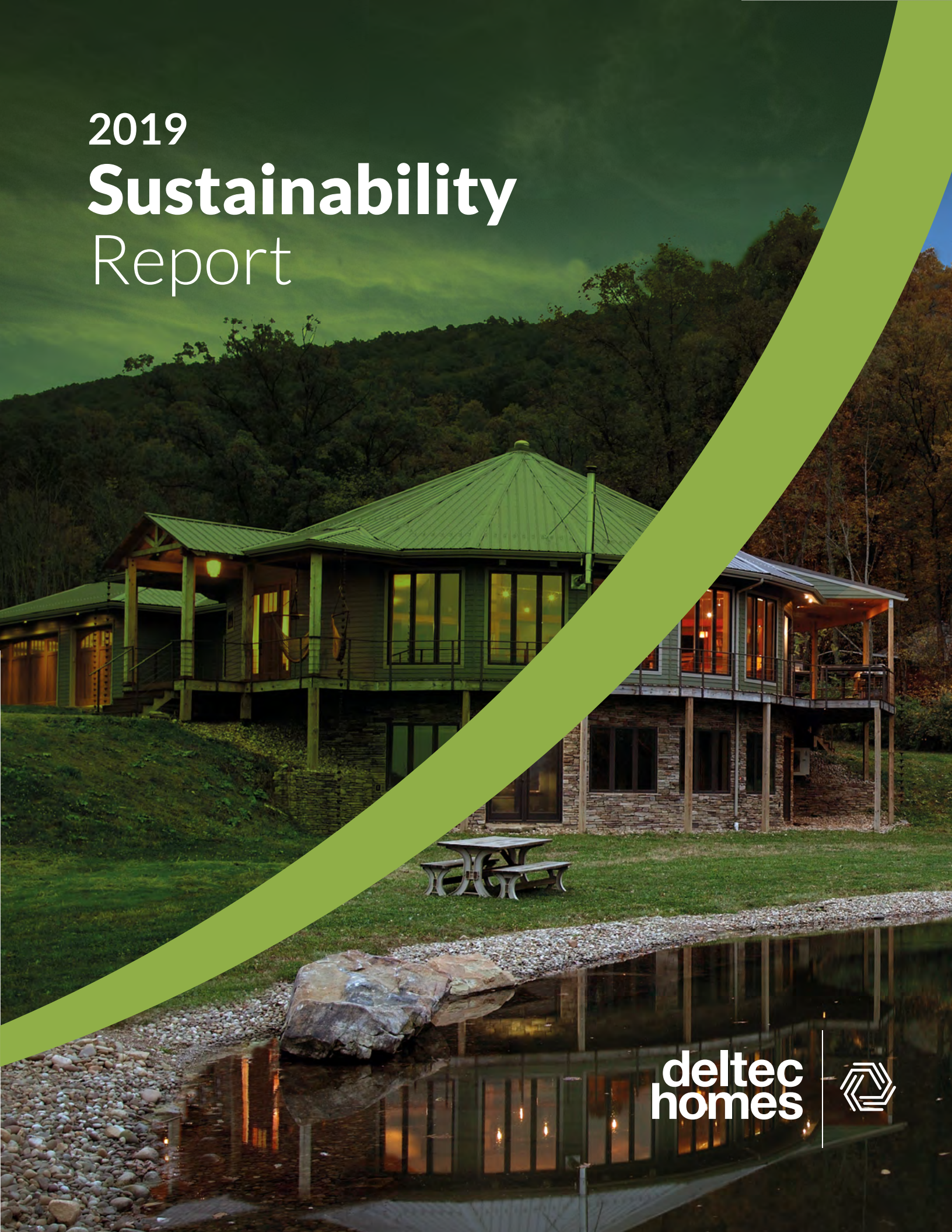
2019 **Sustainability** Report



deltec homes

From Our **President**

There is something special about a family-owned business. The Deltec team is a close-knit group that cares deeply about each other, and this sense of caring connects us to our community and to the greater world around us. When we became a certified B-corporation in 2016 it was a natural fit, allowing us to formally recognize this spirit of caring, while at the same time inspiring us to create a plan for how we improve our organization and the lives of those we impact.

In this report you will find our latest initiatives toward having a positive impact on our world. This year we expanded our sustainability plan into a larger framework of stewardship by adopting two of the United Nations' Sustainable Development Goals: Clean Energy and Climate Action. Caring for our planet requires us to find solutions to both the causes and the impacts of climate change.
We are continuing to improve the Deltec home to do both.

For the past 52 years, we have been just a small part of the world we all share, and we do our part so that you can do yours. When Lee Turner's Deltec survived Hurricane Dorian in the Abacos, his home became the island's medical clinic. When students inhabit our structures at the Francine Delany New School here in Asheville (each classroom is one of our round structures), they are immersed in their learning, challenged to think critically, and practice the principles of social justice. (I hope that you can find a way for a Deltec to enhance a connection you have with our greater world.)

We strive each day to be better than the day before: better not just for ourselves, but better for our world. The essence of this ideal is captured gracefully in a saying we learned as part of our rebuilding efforts in the Bahamas: We sit in the shade of a tree that we did not plant, and we plant a tree in whose shade we will not sit. We endeavor to meet this ideal every day in how we think, who we are, and how we act. We hope you will join us in achieving our vision to change the way the world builds.

Steve Linton, President
Deltec Homes

Our Mission:
Design with ingenuity, deliver The experience

Our Vision:
Change the way the world builds

Our Values:
Excellence, Ingenuity, Listening, Family, and Stewardship

Since 1968, stewardship has been one of our core company values. We are committed to having a positive and sustainable effect on our natural world. We're extremely passionate about building homes that our grandchildren and generations beyond that can enjoy, something we like to call legacy homes. Our ultimate goal is to show the world that there is a better way to build. We design and build homes that are meant to last — a home meant for multiple generations. We know that we must design and build with care, because our places shape us. We must ensure that our spaces shape us in the best ways possible, for both our people and our planet.

We only have one planet, there's no backup plan. When we say our planet, that's intentional. We take ownership of the environment around us by actively taking on the responsibility of fixing problems, finding solutions, and innovating improvements. We are responsible for future generations, because they deserve a healthy planet to live on. We are planetary stewards, and not only do we design homes that have a positive and restorative impact on the environment, we are living out these sustainability-based values in our office and manufacturing facility. Being transparent about our company's operations is an integral part of being a certified B corporation, which requires the highest standards of verified social and environmental performance, public transparency, and legal accountability to balance profit and purpose.

SUSTAINABLE DEVELOPMENT GOALS

How our Work Is Addressing The United Nations' Sustainable Development Goals:

Building homes with dramatically lower energy consumption (pages 6-9), advocating for better energy codes and cleaner energy policies (page 20), helping our clients incorporate renewable energy systems into their projects (page 19).

Building resilient homes designed to withstand strong storms (page 12), operating our facility with renewable electricity (pages 22-23) and offsetting carbon emissions from shipping (page 25), setting a strategy for waste reduction (page 21-23), energy use reduction, and a sustainable supply chain (page 24-25).

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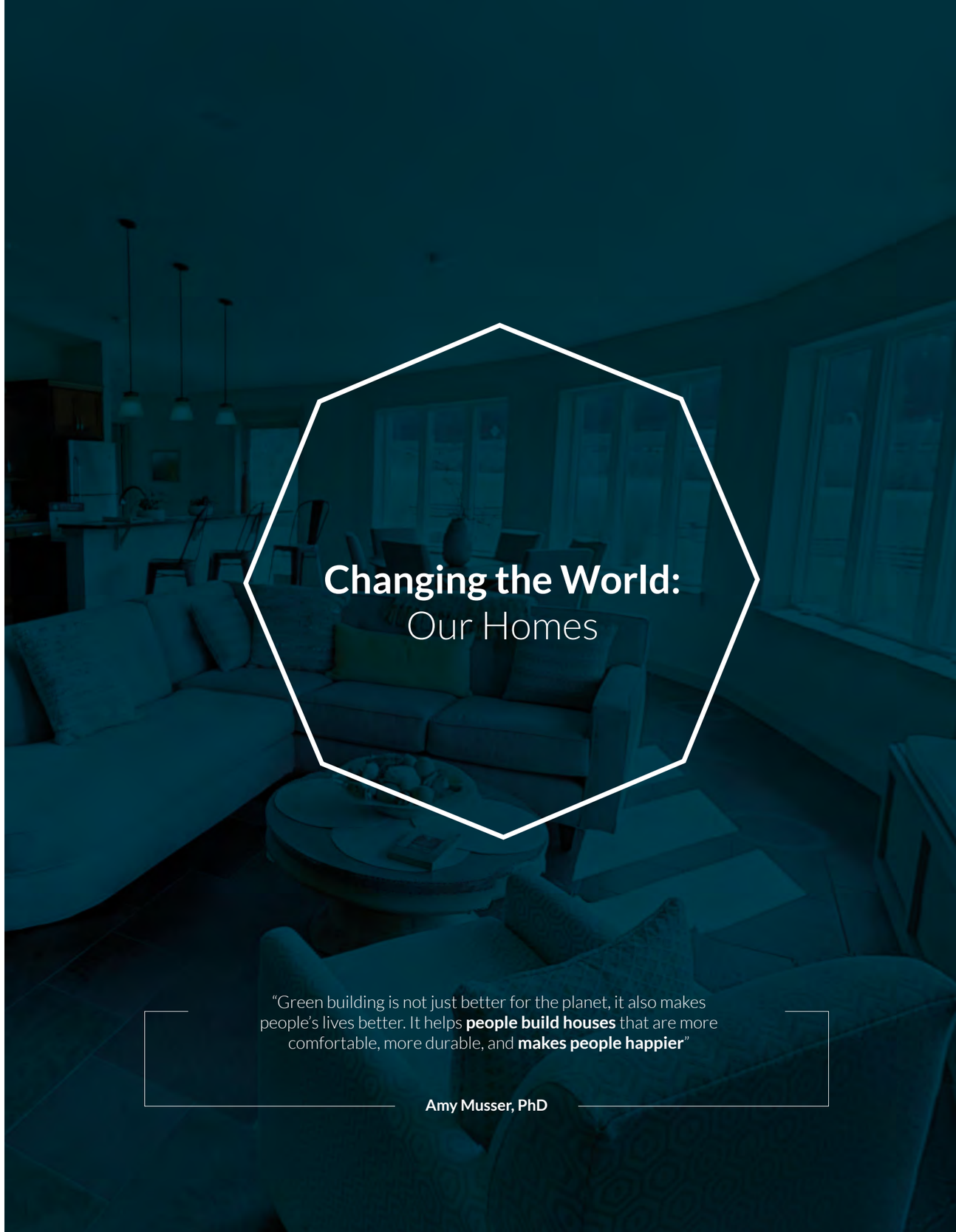


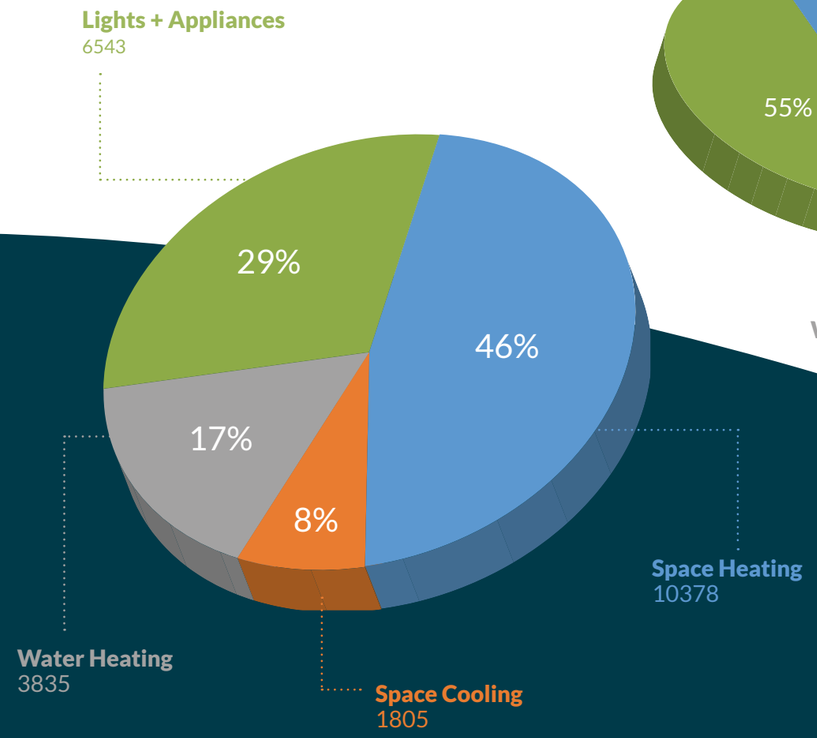
CHANGING THE WAY THE WORLD BUILDS

Energy Efficient Homes

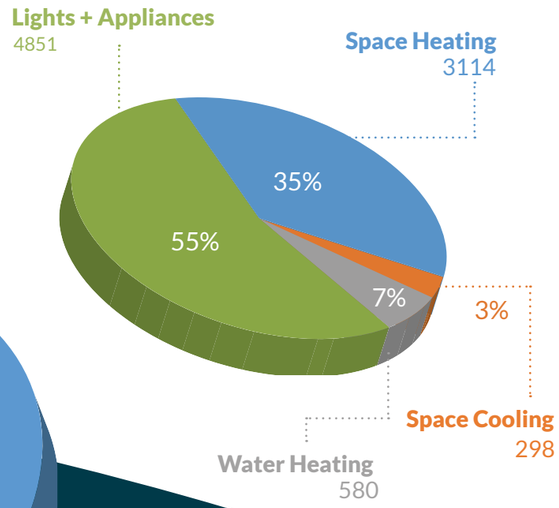
In 2018, residential buildings contributed 20% of US greenhouse gas emissions, while buildings as a whole contributed 40%.[1] Yet high performing homes can use their design and systems to consume drastically less site energy.

Our building system allows our homeowners to practice the proven principles of **super-insulation**, **air-tightness, reduced thermal bridging (see page 8-9)** and **third party verification (see page 14-15)** through programs like the RESNET HERS Index and the DOE Zero Energy Ready Home,to bring down the energy use of their new home compared to standard new construction.

Average US Home Annual
Energy Usage (Kwh/year)[2]



High Performing Home Annual
Energy Usage (Kwh/year)[3]



DELTEC AVERAGE BLOWER DOOR TEST SCORE: 1.6 ACH50

TYPICAL NEW HOME: 5-10 ACH50

Lowest on record: 0.62 ACH50, achieved by our in-housebuilding company

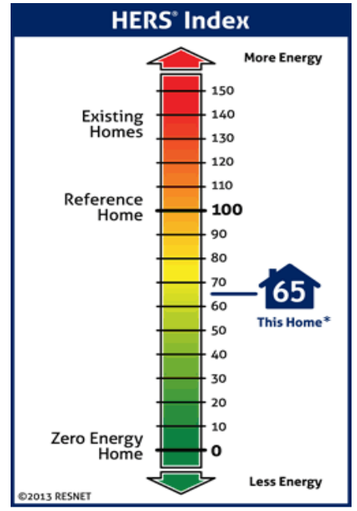
AVERAGE HERS INDEX OF A DELTEC HOME: 45

TYPICAL NEW HOME: 100

Our lowest on record, cumulative: 0
Our highest on record, cumulative: 66

BEATING CODE MINIMUMS

80% of Deltec homes shipped in 2019 contained insulation and air-tightness features that would exceed the 2009 IECC (International Energy Conservation Code) by 20% or more, while 40% of our shipped homes would exceed the 2015 IECC by the same margin.



*Sample rating representation.

The HERS Index is a tool used by green building certification programs, and increasingly by energy codes, to scale a home's efficiency. The lower the score, the more energy efficient, with a score of 100 indicating a basic new home built to code, while a HERS of 0 indicates a net-zero energy home.

1-US Energy Information Administration, 2018 US Energy Use by Sector
2-US Energy Information Administration, 2015 Energy Use of Homes
3-Energy use projections from the energy model of the home featured on pages 12-13 of this report

CHANGING THE WAY THE WORLD BUILDS

Energy Efficient Homes

Shape and Design: A round home has less exterior surface area than a same-sized rectangular home, reducing heating and cooling loss through the exterior shell. Simple shapes are easier to build and usually outperform complex ones in the execution of the details on site. Meanwhile, lay outs that incorporate passive solar design (see next pages) increase natural lighting and can reduce heating and cooling demand by up to 2/3rds compared to a home without passive features.

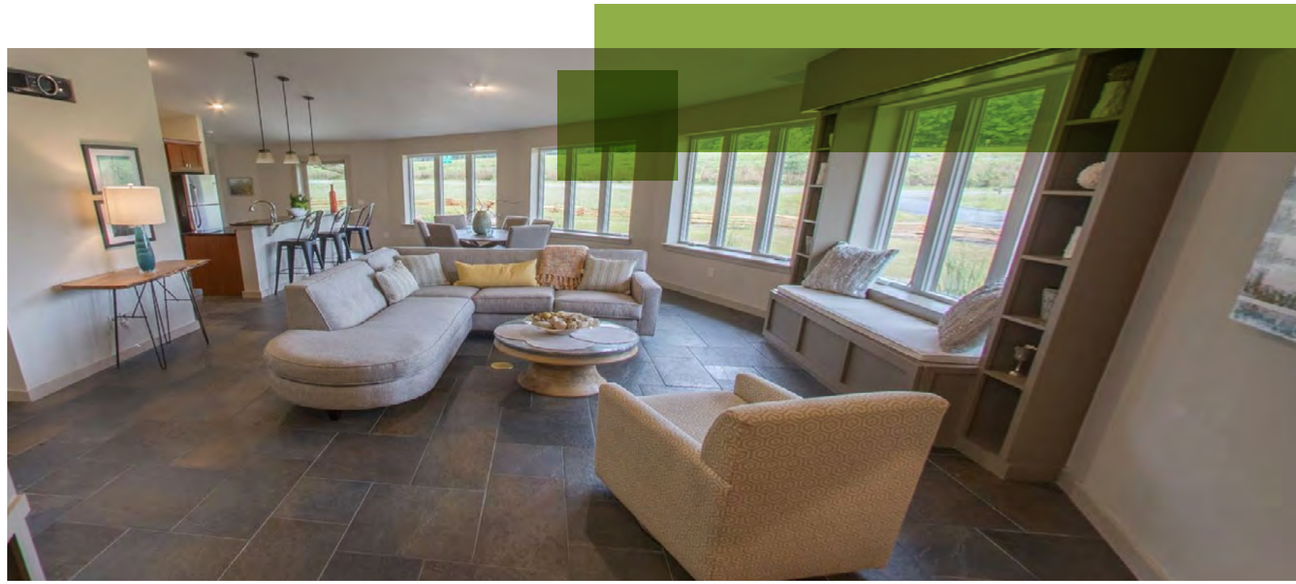
In colder climates, more advanced methods of framing walls to increase space for insulation is needed. Our double-stud wall uses two layers of 2x4 studs, staggered to reduce thermal bridging, which more than double the typical wall space for insulation. Higher ceiling R-values, high performing triple pane windows, and highly insulative floor or foundation materials would also be used. This principle is called super-insulation.

Air Tight Construction:

Our Airblock gasket (left), part of our Energy Wall and Double Stud Wall packages, is a feature installed in our plant that improves panel tightness. A panelized shell, by virtue of tight tolerances, offers a notably air-tight way to build, as tested by a blower door tester (Below)

Exterior Insulation:

Such as the graphite-infused EPS product shown in the photo in the middle, helps reduces *thermal bridging*, the process of extra heat transfer that happens through materials that form gaps in conventional insulation, such as wood studs. The exterior foam insulates structural wood and other framing materials as well as just the cavity, while 2x6 framing wall allows above-industry-standard space for cavity insulation.



Efficiency Beyond the Building Shell

Heating and cooling are the biggest energy expenditure in a typical home, and increased R-values, reduced thermal bridging, and verified air-tightness have the biggest impact on bringing this energy demand down. After that, the efficiency of heating and cooling equipment should be addressed, and after heating and cooling energy the next biggest energy expenditure in most homes is water heating, followed by lights and appliances. Although we do not provide these systems, our building science consultant works closely with our clients on these topics. (Above) A Deltec home takes advantage of our consulting on high performance HVAC systems. See pages 16-17 for a case study of a home with high efficiency heating and water heating systems, and see page 20 for more information on our green building consulting program.

CHANGING THE WAY THE WORLD BUILDS

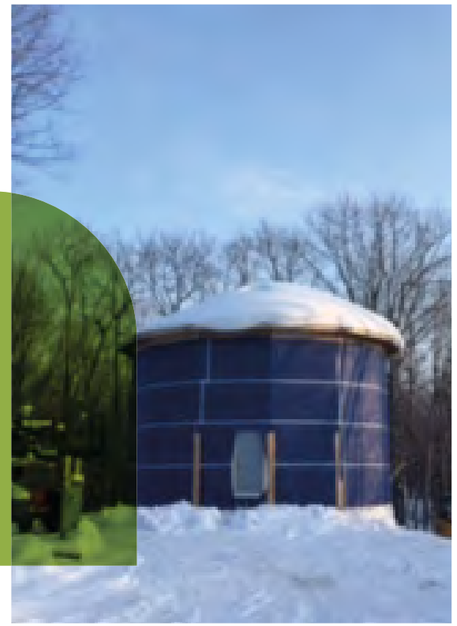
Passive Solar Design

At the intersection of resiliency and energy efficient sits passive solar design: a strategy for laying out a home to reduce heating and cooling needs, simply based on the home's shape and movement of the sun throughout the year. Ancient design principles of window orientation, shape, insulation and shading, when paired with modern construction methods, building materials, and technologies available to build a very energy efficient and durable home, offer significant opportunities to reduce site energy. A passive solar home also offers unparalleled resilience and comfort.

20% of Deltec projects shipped in 2019

20% of Deltec projects shipped in 2019 incorporated passive solar or natural comfort design principles into their total energy-efficient design strategy, often working with our green building consulting services to achieve this design (see page 20 for more about these services)

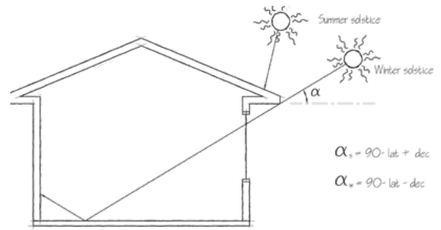
Deep in northwest Minnesota, these homeowners faced extreme conditions. Working with Deltec and with a local builder very familiar with passive solar design, they optimized their south-facing window areas to harness light and heat, while minimizing windows on all other sides of the home. A double stud wall, high performance triple pane windows, and raised heel truss contributed to a super-insulation strategy for this very cold climate to help hold heat in that is harvested from the south-facing sunspace.



Since the beginning of time, people have used the shape and placement of their homes to maximize comfort and minimize energy use. Using the guiding principles of **passive solar design**, you can take advantage of the sun's movement throughout the year to reduce heating and cooling bills.

Orientation

Large, south-facing windows in an open living area allow direct sunlight to heat the space in winter, reducing the demand on the heating system. The appropriate area of south-facing glass is calculated as a ratio of the floor area of the home, based on climate zone and level of passive solar being pursued.



In summer the sun is higher, allowing heat from sunlight to be shaded by a properly sized overhang. In winter the sun is lower, allowing sunlight to enter the space through south-facing windows and provide extra space heating.

Shading

The overhang is thoughtfully selected to shade the south-facing windows in the summer, reducing demand on the cooling system, and leave them unshaded in the winter, allowing heat gain. The length is determined based on home's wall height, window size, and latitude.

Thermal Mass

Dense material inside the living space, such as stained concrete or tile floors, slate wall tile, or other thermal mass absorbs the sun's heat from the windows and stores it, keeping the room at a more constant temperature throughout the day, and the year. The required surface area of thermal mass is calculated according to the square footage of south-facing glass.

Super-Insulation

The level of insulation in the walls, ceiling, and foundation should go well above local code requirements to take advantage of the heat gained from the passive solar sunspace. Slab foundations in particular should be insulated to isolate concrete temperatures from the ground.

CHANGING THE WAY THE WORLD BUILDS

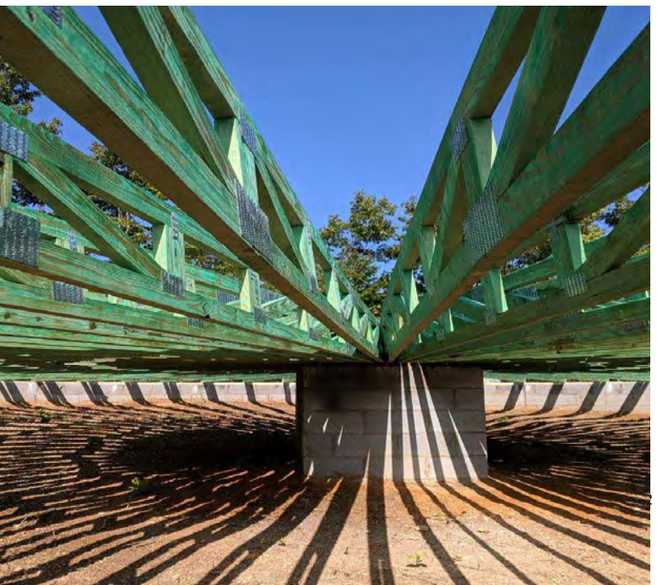
Exceptionally Resilient Homes

Surviving a hurricane is one of the most profound durability benefits of living in a Deltec home, as our signature round design is engineered specifically for hurricane force winds. In a changing climate with even more powerful storms, deliberately designed resilient structures have become more important for human survival than ever before. But even our clients who don't live in high wind or high seismic zones benefit from an incredibly durable home made of high quality, long-lasting materials. We believe all homes should be built only once, last for generations, and allow homeowners to reduce time and money spent on maintenance.

Track Record: The round Deltec home was engineered for high winds, and has a track record of surviving storms for over 45 years. In 2018 and 2019, some of our homes withstood direct hits from hurricanes Florence, Maria, Michael, and Dorian. In some cases our homes were among only a few structures in an area to remain intact.

Radial Engineering: A circular shape more efficiently transfers environmental loads, while the radial engineering of our floor and roof system further spreads the forced of high winds throughout the structure instead of allowing it to build up in one area.

Focus on Critical Connections: Each job is specified to maintain critical connections between the roof, exterior walls, floor system, and foundation. Oversized truss hangers, continuous strapping, and other details may be specified as appropriate based on wind or seismic zone.



Material Excellence: Machine stress rated 2400 psi pine framing lumber used in trusses and walls is twice as strong as typical wood framing material. Five-ply 5/8" plywood sheathing used exclusively in our walls, roof, and floor sheathing, rather than the 7/16" OSB (oriented strand board) sheathing used by most of the industry, strengthens the home and prevents flying debris from penetrating the structure while also offering superior moisture durability. Yet building a hurricane resistant structure out of wood has a reduced carbon footprint over building one out of steel or concrete

Fortified Homes Program: Round Deltec homes are able to be certified through a local Rater with the Fortified Homes program, recognized by the insurance industry in some states for exceptional wind resistance and reduced risk of home loss.

Durable by Design: We use a drainable weather resistive barrier (WRB) with an extra drainage gap to facilitate structure drying more effectively than standard housewraps can. We also offer exterior finish products with excellent warranties, including fiber cement siding pre-pained in our factor with a 50 year siding warranty and a 25 year warranty on the paint and a metal shingle roofing
product with a 50 year lifetime warranty.

A Deltec home in Mexico Beach, FL after Hurricane Michael

CHANGING THE WAY THE WORLD BUILDS

Green Building Certification

Third party verification programs, often call green certification program, are a critical component of quality building. These program bring building science best practices into a construction project in a systematic way, and participating in a green certification program typically results in a higher performing home than is achieved a home that merely incorporates some green features without following the rules of a specific program to do so. Certification requires physical, on-site testing of the home's performance, and inspections conducted by a green building professional. Many Deltec homes are built with features that easily meet or exceed common residential green building programs.

4 COMPLETED 2019

8 IN PROGRESS

TOTAL: 38
SINCE 2009

Energy Star Certified homes are 15-30% more energy efficient than standard new construction. They're also designed and tested to use the most cost-effective and practical energy efficiency features.

0 COMPLETED 2019

1 IN PROGRESS

TOTAL: 9
SINCE 2007

Comprehensive green building programs such as LEED for Homes, Green Built NC, Earthcraft (Virginia and Georgia), and the National Green Building Standard, look at green building from multiple dimensions. Points are rewarded for practices in everything from energy efficiency and durability to material sustainability.

0 COMPLETED 2019

2 IN PROGRESS

TOTAL: 1
SINCE 2018

The DOE Zero Energy Ready Home requires using only the most advanced green building practices in energy efficiency, air quality, durability, water efficiency, and solar-ready design. See case study on the following pages.

*That we know about. Some homeowners never tell us what they end up doing to finish out their home, and it's quite possible these numbers are under-counting the number of Deltec throughout our 52 year history of building that have received one of these, or other, green certifications.

Deltec Rewards Green Building Program Participation

Too few custom clients choose to go through the process of green certification, despite having a home that would easily qualify. Clients cite confusion about the many different certification programs available, the general overwhelming nature of the building process, extra cost, and lack of rebates and incentives as common reasons for skipping this important step in their projects. Deltec has responded by creating a rebate program of our own. We now offer a tiered financial incentive, based on the level of certification achieved, to customers and their builders who submit to us their final green building program certificate.

CHANGING THE WAY THE WORLD BUILDS

WNC's First Zero Energy Ready Home

After speaking with multiple Deltec Homeowners, John and Barry knew they wanted one of our Ridgeline models. And after attending one of our home building seminars, we knew we wanted John and Barry as clients! Creative, patient, thoughtful, and thorough, they were a pleasure to work with. In addition, their home helped expand Deltec Building Company's repertoire, achieving the Department of Energy's rigorous Zero Energy Ready Home Certification.

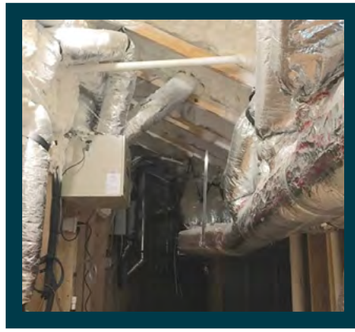
Insulation: Deltec Energy Wall with 2x6 framing insulated with R19 fiberglass batt insulation +R5 exterior continuous insulation for R24 total, R30 open cell spray foam in the roof, Energy Star windows, 1763 square feet, with detached garage, covered screen porch, and breezeway.

Systems: Mitsubishi hyper-heat mini-split heat pump and AC system, Heat Recovery Ventilator (HRV) fresh air ventilation system, 6.8KW grid-tied solar array, heat pump water hater, condensing dryer, induction range, direct-vent propane fireplace, and hot water recirculation pump with manual control (A new feature required by the ZERH program in this floor plan.)

Other: Energy Star for Homes, Indoor Air Plus and DOE Zero Energy Ready Home Certifications, HERS 0

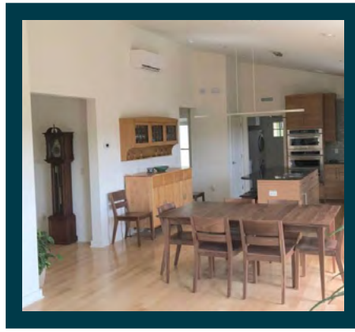
WHAT'S SO SPECIAL ABOUT A ZERO ENERGY READY HOME?

The DOE Zero Energy Ready Home program requires builders to up their game. Earning this certification goes a step above other green certifications, requiring some of the best of what building science has to offer homeowners for energy efficiency, durability, water efficiency, solar energy use and indoor air quality.



Energy Star Certified Homes are already notably efficient due to above code insulation levels, superior air-tightness, efficient LED lighting and Energy Star Certified appliances. Zero Energy Ready Home requires that and more, with a lower target HERS score and a requirement that all ductwork be kept inside the heated space, where it will operate much more efficiently.

Water must not only be heated efficiently, like with this highly efficient heat pump water heater, but delivered to distant fixtures with minimal waste of water or energy while waiting on hot water to arrive. This was achieved with a hot water recirculation pump: homeowners simply hit the button, wait about 40 seconds, then turn their tap on for water that's already hot.



Zero Energy Ready Homes must also meet EPA Indoor Air Plus Certification, requiring mechanical fresh air ventilation, passive radon mitigation, higher levels of filtration, ultra-low emitting paints, stains, carpet and wood products, and safe and clean burning combustion appliances. It also requires that steps be taken to reduce pollutants during construction such as covering all registers and flushing out the home prior to occupancy.

It wouldn't be "zero energy ready" without the "zero energy"—in this case, a 6.5 kilowatt grid-tied solar array, sized to meet the home's electricity needs with a net energy bill of 0. HERS score: 0.

CHANGING THE WAY THE WORLD BUILDS

Healthy Home Philosophy

According to the US EPA, Americans spend 70% of their time inside their home.

If we are to serve our clients, green building must concern itself with the indoor environment as much as with the one outdoors. Deltec works with clients to understand and incorporate the best available practices for reducing indoor air pollutants and providing proper ventilation and moisture control to their homes, based on building science. Strategy highlights:

The inside of this Solar Farmhouse uses Interior finish products chosen to reduce VOC offgassing, and a wood stove selected to meet EPA Phase II emissions limits, with an outside air intake to reduce backdrafting.

Source Control

All products included in the Deltec shell package comply with LEED 2008 VOC emissions standards, CARB II, and contain no urea formaldehyde.

Any combustion appliances used in our homes should be direct-vent, with outside air intake. We recommend only EPA Phase II certified wood burning stoves or fireplaces. Unvented combustion appliances should never be used.

Kitchens and bathrooms should incorporate local exhaust systems according to Energy Star for Homes and ASHRAE 62.2 standards, and should be tested to verify performance.

All interior paints, stains, carpets, wood flooring, cabinetry, countertops, and composite wood products should be non-toxic and Low-VOC, such as those that are GreenGaurd Certified, CARB II Compliant, or GreenSeal Plus labeled.

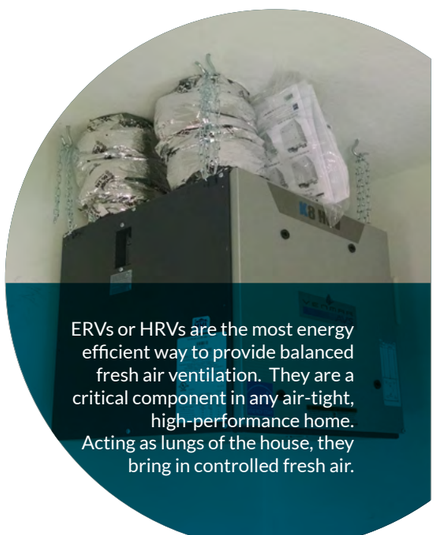
Fresh Air Ventilation and Filtration

We recommend balanced ERV (Energy Recovery Ventilation) or HRV (Heat Recovering Ventilation) fresh air ventilation systems designed to provide ASHRAE62.2 recommended whole-house ventilation levels. We offer ERV and HRV products designed to meet the ASHRAE standard for any job shipped. Over 47% of projects shipped in 2019 incorporated one of our ERV or HRV systems.

Clients with sensitivities to particular allergens should consider upgraded air filtration (MERV 8 or better).

Radon Control

We recommend clients install a passive sub-foundation radon system if building in areas at risk for radon. If testing after move-in reveals elevated radon levels, the passive system should be activated.



ERVs or HRVs are the most energy efficient way to provide balanced fresh air ventilation. They are a critical component in any air-tight, high-performance home. Acting as lungs of the house, they bring in controlled fresh air.

Solar Energy Design Types

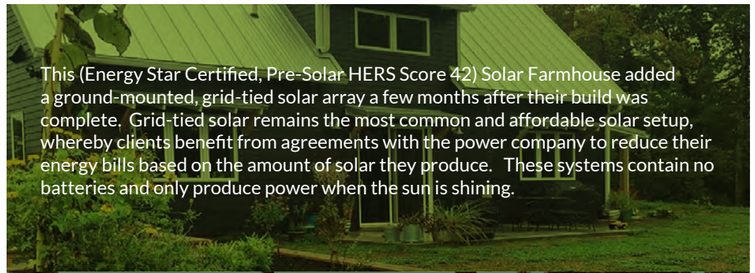
CHANGING THE WAY THE WORLD BUILDS

Renewable Energy

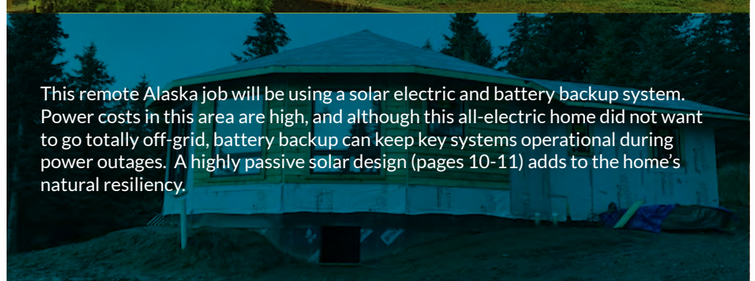
Many Deltec homeowners dream of reducing the environmental impact of their home and increasing their independence through on-site renewable energy. Active solar systems are the most common form of renewable energy available for individual residential projects, and quite a few Deltec clients incorporate active solar systems, either as part of their build or as an add-on after their home has been built. Rooftop solar has huge potential to reduce our society's carbon footprint; an estimated 24.6 gigatons of carbon dioxide emissions could be reduced if distributed solar projects grew to **7% of worldwide electrical generation by 2050**.[1] Any active solar project is made more effective when integrated with a structure already optimized for energy efficiency.

OVER 10% OF 2019 DELTEC PROJECTS

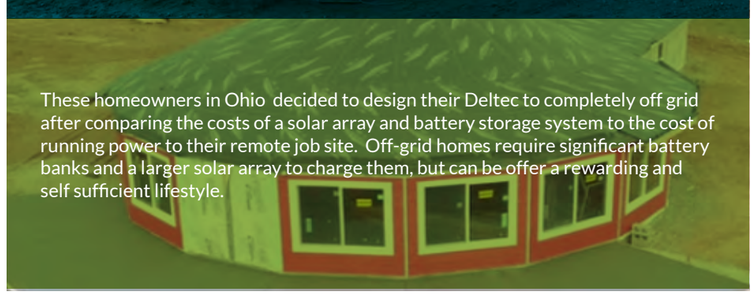
INCORPORATED ACTIVE SOLAR ENERGY SYSTEMS



This (Energy Star Certified, Pre-Solar HERS Score 42) Solar Farmhouse added a ground-mounted, grid-tied solar array a few months after their build was complete. Grid-tied solar remains the most common and affordable solar setup, whereby clients benefit from agreements with the power company to reduce their energy bills based on the amount of solar they produce. These systems contain no batteries and only produce power when the sun is shining.



This remote Alaska job will be using a solar electric and battery backup system. Power costs in this area are high, and although this all-electric home did not want to go totally off-grid, battery backup can keep key systems operational during power outages. A highly passive solar design (pages 10-11) adds to the home's natural resiliency.



These homeowners in Ohio decided to design their Deltec to completely off grid after comparing the costs of a solar array and battery storage system to the cost of running power to their remote job site. Off-grid homes require significant battery banks and a larger solar array to charge them, but can be offer a rewarding and self sufficient lifestyle.

CHANGING THE WAY THE WORLD BUILDS

Education and Advocacy

If we are to serve our clients, green building must concern itself with the indoor environment as much as with the one outdoors. Deltec works with clients to understand and incorporate the best available practices for reducing indoor air pollutants and providing proper ventilation and moisture control to their homes, based on building science. Strategy highlights:

Deltec Homes has a building scientist and HERS Rater on staff who is available to consult with clients on green building strategies for free. This has been a popular service of our company since 2006. We are available to work with clients on:

- **Building science best practices, including insulation strategies, & HVAC strategies**
- **Indoor air quality best practices**
- **Projected energy use modeling for a proposed home design**
- **Green building certification planning**
- **Passive solar design analysis**
- **Active solar system planning**
- **Material sustainability product research**

256

people educated on green building at our home building seminars or lunch and learn events in 2019

52%

of clients whose homes shipped in 2019 took advantage of our green building consulting services, and 82% of our 2019 clients received education on green design practices

22%

of clients whose homes shipped in 2019 used energy modeling during the design process to guide their choices

Deltec Homes is a proud member of the Green Built Alliance, WNC's premier non-profit for promoting green building in our region, and the NC Building Performance Association, a non-profit advocating for more energy efficient buildings in our home state of North Carolina. Through these organizations we have written articles, letters to policy makers, held educational workshops, and volunteered time for fund raising efforts to help these organizations continue their missions. In 2019, we assisted the GBA in updating their Green Built Homes program (see page 15), including a new Regenerative Home certification program.

Changing the World: Our Operations

"Panelized building is an inherently green way to build. Factory assembly means **reduced construction material waste**, less job site disturbance, and easier cleanup."

National Association of Homebuilders

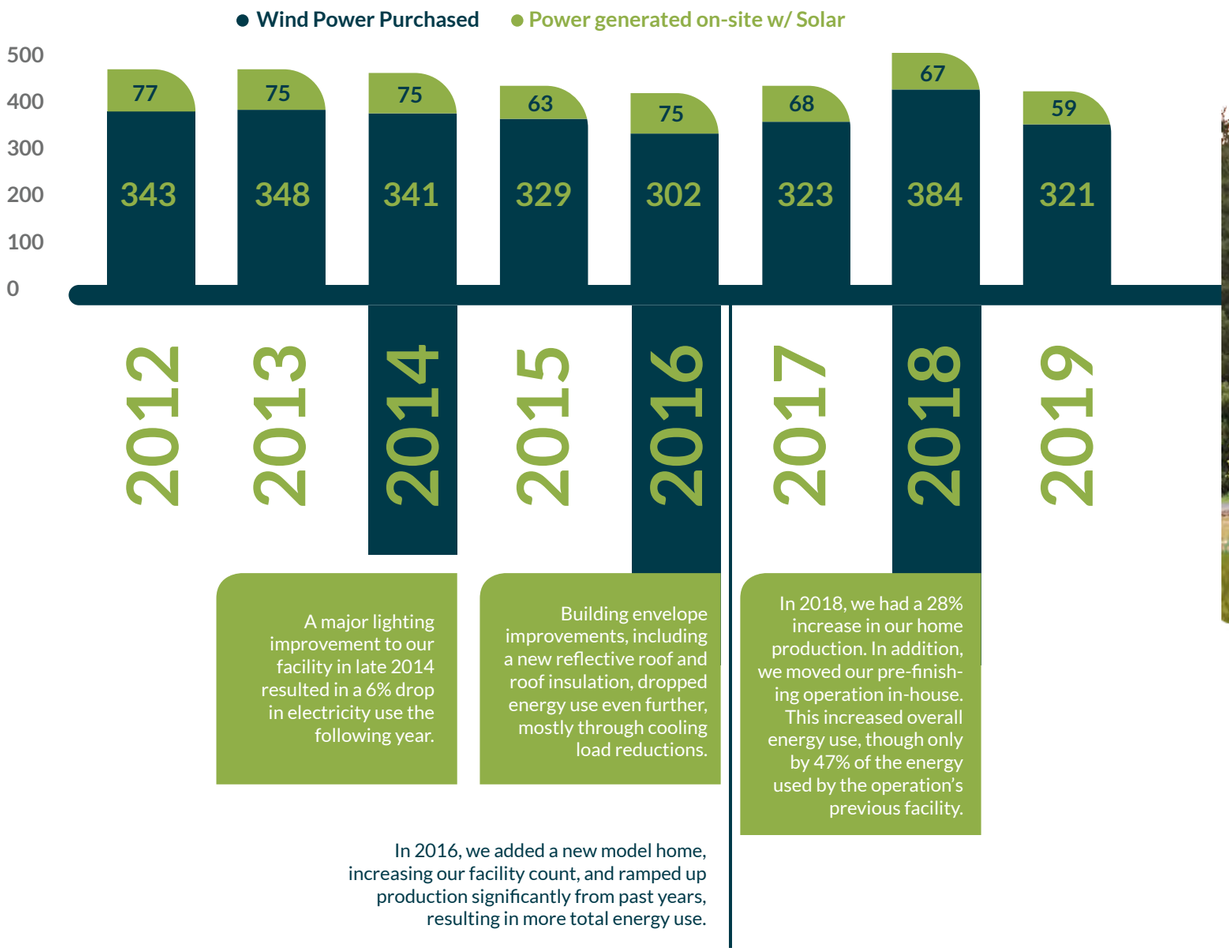
OUR OPERATIONS

Site Energy

Deltec Homes has operated with 100% renewable site electricity since 2007

A combination of purchased wind power and a 55 KW rooftop solar array allows us to build every home using 100% renewable energy. With that, we understand that a reduction in energy use is still critical to reducing our total energy impact. Therefore, we've identified energy efficiency improvements to our 100+ year old building and continue to seek ways to reduce our conventional electric energy use footprint.

Electricity Used (Megwatt-Hours)



A major lighting improvement to our facility in late 2014 resulted in a 6% drop in electricity use the following year.

Building envelope improvements, including a new reflective roof and roof insulation, dropped energy use even further, mostly through cooling load reductions.

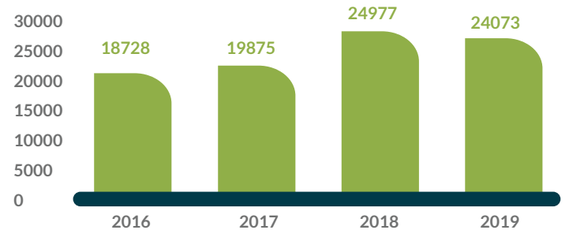
In 2018, we had a 28% increase in our home production. In addition, we moved our pre-finishing operation in-house. This increased overall energy use, though only by 47% of the energy used by the operation's previous facility.

In 2016, we added a new model home, increasing our facility count, and ramped up production significantly from past years, resulting in more total energy use.

(Top) A 55KW solar array, installed in 2007, provides a portion of our on-site electrical use in our manufacturing facility. The other portion comes from wind power purchased through a green energy provider.

(Right) Our Model Home and Innovation Center, built in 2016, is a Green Built NC Certified Net-Zero Facility, utilizing a 5.12KW grid-tied solar electric system.

Natural Gas (Therms)



We use natural gas to heat our 100+ year old manufacturing facility. Heating energy use fluctuates as Asheville's winters fluctuate. In 2015, we improved our facility's insulation, but 2018 and 2019 saw harsher winters than average.

Site Energy Areas for Improvement

- Compressed air, used for most of our powered nail guns, saws, and other tools, is another source of energy use that we are determined to improve.
- We are considering a demand response program with our local power company to remotely shut off our AC systems for up to 15 minutes at a time during times of peak demand to reduce grid impact.
- Natural gas use is fixed based on heating costs and building envelope improvements have not made a significant impact to this number. We're exploring carbon footprint and carbon offset potential for natural gas use.
- Other small scale site energy sources that are more difficult to track need to be accounted for. Site energy impact from forklift use and mileage with company fleet vehicles need to be quantified—shipping of our product is considered separately (see page 25).

OUR OPERATIONS

Supply Chain

Our shell packages are composed of raw and manufactured building materials from various suppliers in the United States. Many of our suppliers must provide materials that meet our exacting standards for durability, strength, energy efficiency, and quality. We also vet our suppliers for their environmental, health, safety, and diversity practices, and consider many elements of environmental sustainability when selecting products.

Truss Lumber and Plywood:

Our exclusive supplier of truss lumber in north Georgia has achieved the Sustainable Forestry Initiative® (SFI) Certified Sourcing certification. We're proud to add them to the list of our other SFI Certified material: plywood by Georgia Pacific, used in our wall, roof and floor sheathing, and Huber Advantech, floor sheathing used in our Ridgeline and Solar Farmhouse models. The Sustainable Forestry Initiative® supports sustainable forest management.

Metal Shingle Roofing:

An optional upgrade on our round homes is an Energy Star Certified cool roof product, containing 90% recycled content. The shingle shape allows for reduced waste on our roof compared to sheet metal.

Windows:

Are by Marvin, a 100% US made and woman-owned company, with Energy Star Certification on most window options, and high efficiency Tripane available for cold climate and high energy performance projects.

Exterior Insulation:

In 2019, Deltec has switched to a graphite-based expanded polystyrene (EPS) product for our exterior foam insulation used to mitigate thermal bridging (see page 8). This product is manufactured using blowing agents with zero global warming potential (GWP) and uses less raw material than other types of plastic foam, while offering better moisture and insulation performance over time.

Locally Sourced Components:

Our fiber cement siding, plywood sheathing, and metal structural components are manufactured or fabricated and come from suppliers located within 150 miles of our manufacturing facility. Typar drainable housewrap and truss lumber come from facilities within 500 miles of our plant.

Composite Siding:

The Solar Farmhouse features a new sustainable siding choice: Boral TrueExterior™ polyash siding. This product is Cradle to Cradle Certified™ Bronze, and contains a minimum of 70% recycled content. Cradle to Cradle Certified™ products are evaluated for material health, material re-utilization, renewable energy use and carbon management, water stewardship, and social fairness.

All Composite Wood Products:

in our shell package, including Plytanium plywood, Advantech sheathing, any structural LVL components, Miratek Trim, LP Smartside soffit material, are CARB II Compliant.

OUR OPERATIONS

Water

Our manufacturing process does not use a significant amount of water. Our water use is primarily from normal office operations and was well below average for a company of our size.

Used in our office and model homes, well below the average **920K gallons** per year for an office of our size. This is a 34% drop from the previous year.

Shipping

Every Deltec structural shell is manufactured in a facility in Asheville, NC, and shipped to the customer's job site. Sometimes the job site is right next door, often it is across the country. Shipping our homes, for now, still relies on fossil fuel energy, typically in the form of enclosed tractor trailers. In 2019, as in 2018 and 2017, we partnered with Appalachian Offsets, an Asheville-based non-profit, to offset our carbon emissions from our domestic shipping. These offsets are helping to fund a solar array project at Isaac Dixon Elementary School.

Domestic Shipping miles offset 2019: 66,000

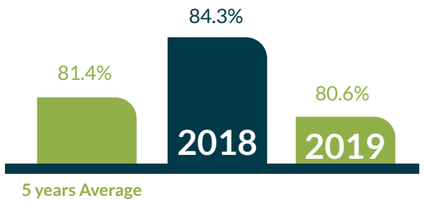
APPALACHIAN OFFSETS

OUR OPERATIONS

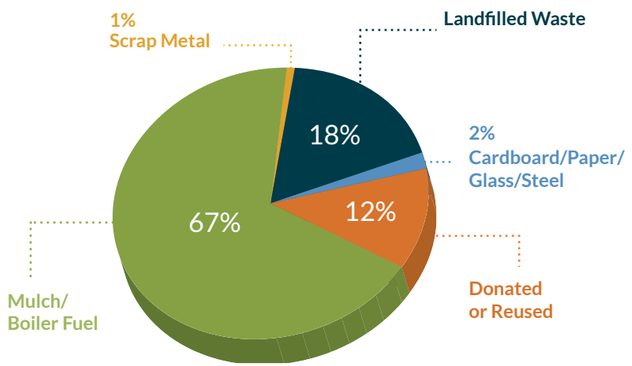
Waste Reduction

Our manufacturing process produces no hazardous wastes. Through comprehensive re-use, donation, and recycling programs, we are able to divert an average of over 80% of our manufacturing waste by volume from the landfill.

Manufacturing Waste Diverted from Landfill

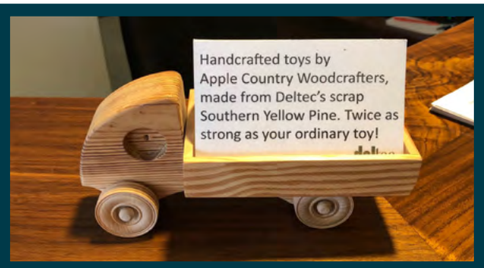


Waste Streams



Waste Reduction Program Highlights

Habitat for Humanity collects pallets of our usable scrap plywood, usable scrap insulating foam board, and lengths of fiber cement siding to sell in their local Re-Store, whose proceeds benefit Asheville area habitat projects.



Local Artists and Woodworkers collect our scrap foam or wood for their own projects. A local wood-working collective has recently turned some of our scrap southern yellow pine into high quality toys for a Christmas fund drive.

North Carolina Wildlife Commission, in partnership with Wild South, has hosted barn owl and northern flying squirrel box building nights in our plant, turning some of our otherwise unusable scrap plywood into nest boxes for endangered and threatened species.

Northern flying squirrel in a nest box built by Deltec employees with our scrap ply-wood. Photo courtesy C. Kelly. Nest boxes allow NC Wildlife staff to monitor squirrel populations in areas of critical habitat.

Insulated Headers:
We insulate the structural header in our Energy Wall with small pieces of foam board that would have otherwise been discarded. Insulating headers is not typical practice for most home builders, but it not only increases the efficiency of the home, it gives us an opportunity to reuse and recycle.

Optimized Saw:
Our TCT saw uses sophisticated software to optimize cutting based on our inventory and the jobs loaded into the system. Waste pieces that can be converted into commonly used truss webs are marked for special recovery.

Waste Areas for Improvement

Small scrap plywood remains a large, capital-intensive challenge to recycle. Significant capital expenditures would be required to purchase chipping and re-selling equipment.

Constantly changing (and generally shrinking) regional markets for recyclable materials such as plastics, make finding new recycling streams and maintaining old ones challenging.

Building materials are often dense and composed of composite materials that are already down-cycled or else very hard to recycle. Better life-cycle assessments are needed and a shift to more materials with high recycled content may be the best path to greater reductions in life cycle costs of our manufacturing waste.

Changing the World:
Our Comunnity

"Society's most challenging problems cannot be solved by government and non profits alone. The B Corp community works toward reduced inequality, lower levels of poverty, a healthier environment, stronger communities, and the creation of more high quality jobs with dignity and purpose."

BLabs, Inc, the non-profit organization certifying Benefit Corporations (BCorps)

Community

Certified B Corp

Deltec Homes remains a Certified B Corp, an honor given to companies who meet the highest standards of verified social and environmental performance. The process is rigourous and entails an assessment that weighed and scored our company on metrics of governance, workers, community, and environmental stewardship. We completed our re-certification for 2017 with a slight improvement in our overall score on the B-Impact assessment.

Living Wage Employer

A community is only as strong as we make it, and in order for a community to thrive, it is critical that its inhabitants earn enough money to be self-sustaining members. We are proud to be Living Wage Certified, an official recognition of our efforts to promote a just and sustainable local economy through the Living Wage program of Just Economics in Western North Carolina, the largest program of its kind in the United States.

Community Service Hours

Deltec employees give many hours to community service on company time, for projects ranging from a regular meals on wheels route, to community and student education on green building. At least **200** volunteer hours were put on record by our staff in 2019.

OUR COMMUNITY

Corporate Giving

In 2019, we were able to donate over 1% of our profits to local non-profit groups and causes that matter to our founders and our employees:

- Meals on Wheels of Buncombe County
- Habitat for Humanity
- Global Giving
- Asheville Buncombe Technical Community College
- The Green Built Alliance

Employees

Over **80%** reported feeling engaged with their work

8.6 Years — Average employee tenure

79% Woman-owned company

33% Women and minorities in management

100% of promotions in 2019 occurring from within

88,563,948 S T E P S

Taken by our employees in our walking wellness program, equivalent to 44,282 miles, or 1.8 trips around the globe.

"We shape our dwellings, and afterwards our dwellings shape us"

Winston Churchill

Looking Forward

True environmental and social sustainability is a journey that never ends. The support our customers place in us allows us to grow and thrive, and our goal is to carry that growth into improving our product and our sustainability even more. Here are just a few of the projects we're working on for 2020 and beyond:

- Increasing the durability and super-insulation of our wall systems through a design that incorporates a rainscreen drainage gap and a 3"+ thick layer of exterior foam insulation
- Expanding the solar energy production capabilities at our manufacturing facility
- Increasing our use of circular economy products: Offering Cradle to Cradle certified siding options on our 360 collection models
- Engineering our structures to withstand even greater wind speeds
- Exploring material alternatives that sequester carbon
- Continuing to encourage our customers to choose green certification programs through our green rebate program, building more certified Zero Energy Ready Homes
- Offering high performance HVAC design and energy systems design packages pre-selected to hit the DOE Zero Energy Ready Home certification program

deltec homes

Certified B Corporation