ROUND THE BEND FARM

A CENTER FOR RESTORATIVE COMMUNITY LEARNING CENTER EST. 2017

OUR MISSION

We are a living laboratory that cultivates, educates, and empowers people of all ages. We are devoted to the global paradigm shift toward hope and abundance by valuing diversity, modeling nature, and redefining wealth.

When the Learning Center was still just a vision, Round the Bend Farm (RTB) set clear standards for developing a building that demonstrates our principles. Environmental responsibility, fostering local community, modeling natural systems, and connecting people to the land and sources of food were essential. Backed by the generous financial support of the Bromley Charitable Trust, the talented building and design team earnestly employed these principles, laying the foundation for a structure that is strong, beautiful, functional and soulful.

Today, visitors to RTB can learn first-hand about restorative living, from a building that is thought-provoking and educational in its mere existence.

Throughout the design and building process, we asked ourselves: How can we build and live closer to nature? What qualities can be woven into a space to enhance a sense of community? What is the impact of even small building decisions on the broader community and the environment?

The RTB team thinks and acts by our guiding principles: valuing diversity, modeling nature, and redefining wealth. We believe in the words of Einstein, "we cannot solve our problems with the same thinking we used when we created them." So, we seek change. Our foundational tenets direct our energies, check our intentions, and hold us up as we pursue a global paradigm shift toward hope and abundance. To live authentically by these principles requires active stewardship of our land, our infrastructure and our community; and constant consideration of *how* we do *what* we do.

"THE ULTIMATE TEST OF MAN'S CONSCIENCE MAY BE HIS WILLINGNESS TO SACRIFICE SOMETHING TODAY FOR FUTURE GENERATIONS WHOSE WORDS OF THANKS WILL NOT BE HEARD."

- Gaylord Nelson

VALUING DIVERSITY

We believe that *diversity is the key to nature's success*. Diversity shapes our decisions and actions. We strive to have diversity of thought, people, plants, animals and microbes!

MODELING NATURE

On the land, nature leads. We look to nature as our role model in the creation, development, and implementation of restorative processes as they relate to food, farming and living.

REDEFINING WEALTH

We seek to create an environment where characteristics of a "wealthy" life are available to all: from good health and quality of life (which includes loving your work), to deepening connections to self, community and nature.

DESIGN & CONSTRUCTION METHODS

We at RTB believe in conscious design, and decided that building predominantly with stone, wood and metal fit our ethos best. The team then worked to integrate natural materials wherever possible. Considerations such as southern orientation and architectural style allowed us to work with the elements and geography of the land, resulting in reduced energy consumption, enhanced functionality and low-maintenance overall. With our tenets guiding the design, the result is a building that celebrates diversity, models nature, and redefines wealth, by choosing materials that offer a synergy of strength, beauty, and sustainability.

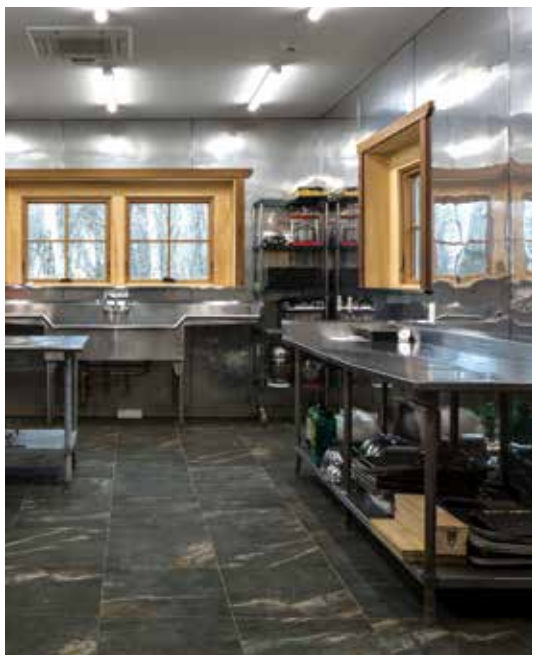
In the attainment of high ideals, RTB Visionaries Desa Van Laarhoven, Geoff Kinder and Ellen McFarland led the way, along with Saltonstall Architects of Marion, MA. Head architect Will Saltonstall provided detailed designs based on RTB community needs and future vision for use, resulting in a final product to be proud of and learn from for generations.

"IN NATURE NOTHING EXISTS ALONE."

- Rachel Carson

ARCHITECTURAL CHARACTER played an important role in design, with the legacy of Southeastern MA being a major inspiration for building design and construction. From the single-story height and wood siding, to a pitched metal roof with overhang, we borrowed from the historic, place-based architecture that New England is known for.

THE KITCHEN & DINING SPACES were deliberately designed for optimal use, combining form and function with a community feel that has all the commercial kitchen amenities. The space will serve as an ideal area to preserve the bounty of seasonal harvest. Stainless steel and granite are two materials found here, chosen for their strength, durability and ease of maintenance. Used items that found a new home in this space include a steam kettle, double oven, three-bay sink, stainless steel prep/work tables and a commercial-grade oven.



LOW-MAINTENANCE design is focused on the most durable, user-friendly materials possible, that require minimal upkeep and low-tech repairs.

CONNECTOR ROOFS intentionally link the areas of the Learning Center, visually and functionally. By requiring outdoor passage between rooms, people connect with the natural farm environment.

ENERGY

It's high time that we shift a paradigm of ever-increasing consumption to one of intentional reduction of use and need. At RTB we are relieved and humbled to have our electric needs supplied entirely by the sun. We further ally with the power of nature through the use of passive energy design, reducing overall energy consumption. Our orientation and design maximizes beautiful, natural lighting throughout the structure. Passive ventilation is another energy-efficient way to modify the indoor climate, using the fresh air adequately supplied by nature. Both passive light and ventilation are also extremely beneficial to human health, which was of primary concern in decision-making.

COTUIT SOLAR of Cape Cod installed the 49.8kW DC (39.6kW AC) PV system, which is capable of producing up to 66,000 kWhs of energy each year. Our three sub-arrays consist of 166 LG 300w modules, each of which are "grid-tied" to Eversource using Enphase M250 Microinverters. This means that on the days we produce more energy than we need, RTB is able to gain "credits" toward future use. This investment into solar energy should pay for itself within just seven years.

DOUBLE-STUDDED WALLS are a simple, high-performance, lower-cost alternative to many other thick wall designs. This design uses basic and non-toxic construction materials, compared to other high R-value options. The twelve-inch gaps between walls are filled with rock wool insulation, creating an R-value of about 40.

DOUBLE AND TRIPLE-PANE WINDOWS are super-insulated, creating a U-Value of .22 to .3, which translates to energy savings. By still allowing for natural light to enter the building, they encourage further energy savings through passive heating and lighting.

"THE GREATEST THREAT TO OUR PLANET IS THE BELIEF THAT SOMEONE ELSE WILL SAVE IT."

- Robert Swan

A GREENHOUSE made of glass and aluminum, and designed by the renowned Botanical Greenhouse Builders, allows RTB to get a head start on producing enough food for the entire team with no need for fossil-fuel energy use. With maximum sun-exposure and doors that open into the office, the greenhouse also doubles as an ideal passive heating source.

THE EMERSON AVANT ECO FAN incorporates a super-efficient DC motor. Unlike traditional AC motors that use electricity to create a magnetic field, DC motors have their own built-in permanent magnets, so they use three to five times less electricity. This unprecedented breakthrough in ceiling fan technology far exceeds the standards set for ENERGY STAR Qualification by the Department of Energy (DOE). In keeping with our mission, we opted for wood blades instead of conventional plastic.

THE COOLBOT SYSTEM allowed RTB to build a custom walk-in, three-bay food cooling system, using simple AC units that allow for structural and functional flexibility, and the ability to switch units off when not in use. North-side orientation and extra-insulation also resulted in the most energy-efficient system possible.

STRUCTURAL INSULATED PANELS (SIPS) are custom fabricated in factory, which results in shorter construction time and less waste. This highly-insulated (R-value 64) option allows for smaller heating and cooling systems, which was an optimal choice for the classroom, where high ceilings create the potential for high energy loss.

HVAC heating was installed by New England Energy Concepts, Inc. of North Dighton, MA. The two-zone Mitsubishi Hyper Heat Ductless Mini split system (Model MXZ-C) has a Seasonal Energy Efficiency Rating (SEER) of 19, compared to the conventional average SEER of 14-16. The Learning Center utilizes three separate systems throughout. These systems use split, air-source heat pumps that also contribute to energy savings. The pumps can deliver up to three times more heat energy to a home than the electric energy it consumes. Ultimately, this system allows RTB to heat off of the solar panels, a carbon-neutral energy expenditure.

A CAST IRON WOOD STOVE crafted in Norway is the sole source of heat for the entire library. The "Jøtul F 500 Oslo" has a maximum output of 70,000 BTU's and uses non-catalytic clean burn technology, which can heat up to 2,000 sq.ft. with an HHV efficiency of about 74% and LHV efficiency of approximately 80%. RTB intentionally chose this heat source; rather than passively turning a thermometer up, we opted to warm ourselves by actively connecting to our environment and our resource use. And as the only indoor wood stove on the farm, the fire place is a very special spot for connecting and gathering as a farm community.

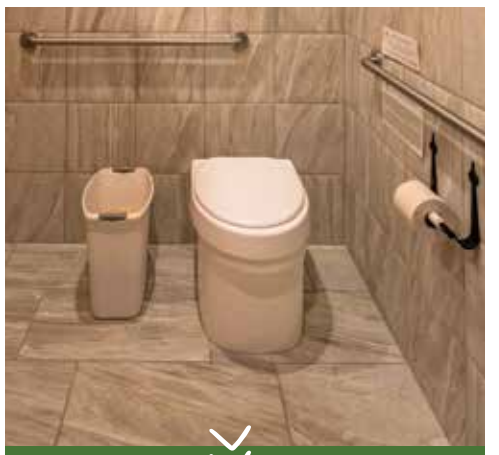
HOT WATER HEAT PUMPS are two to three times more efficient than conventional electric resistance water heaters. These pumps use electricity to draw heat from the surrounding environment, instead of generating heat directly.

WASTE & RECYCLING MATERIALS

In nature "waste" does not exist. What one organism leaves behind, another uses to create new life. A rotting tree creates a rich seed bed for the forest's next generation. Everything exists in a synergetic, relational matrix. And at RTB, we seek to restore a way of life that honors this fact. A second life was bestowed upon so many materials and objects in their adoption by RTB. Materials that would have otherwise wound up in a landfill are now fully-functional and will be serving our community for years to come. By recycling materials, we reduce our footprint on the earth and educate the public on concrete ways that we might change our "throw-away" culture in pursuit of sustainability.

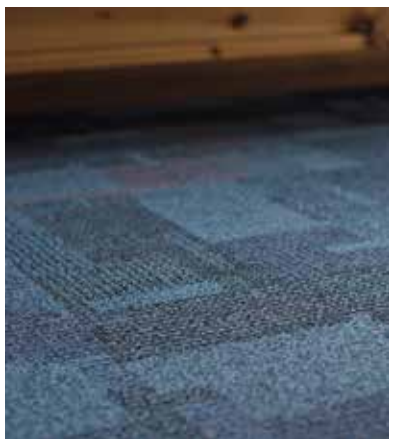
"WASTE EQUALS FOOD, WHETHER IT'S FOOD FOR THE EARTH, OR FOR A CLOSED INDUSTRIAL CYCLE. WE MANUFACTURE PRODUCTS THAT GO FROM CRADLE TO GRAVE. WE WANT TO MANUFACTURE THEM FROM CRADLE TO CRADLE."

- William McDonough



COMPOSTING TANKS SIT BELOW FLOOR IN BASEMENT

COMPOSTING TOILETS & WATERFREE URINAL both help to conserve massive amounts of water. The Phoenix Composting Toilet System, Model 201, installed by Conor Lally of Nutrient Networks of southcoast MA and Ben Goldberg, uses no water or chemicals, only flaked (local) pine shavings to support breakdown and inhibit odor. An electric fan and vent pipe are located on each unit to pull fresh air into the tank and remove gases and odors, leaving this system completely odorless. This system transforms human waste into a rich, well-stabilized soil that will be buried in the forest (away from wetlands, crops and foot traffic) under 6" of dirt to further breakdown. The Sloan Waterfree Urinal WES-1000 conserves up to 40,000 gallons of water per year, and does not require costly supply plumbing.



INTERFACE CARPETS use modular tiles made from repurposed carpets to create beautiful patterns, secured with a minimal amount of organic glues. As tiles age, recycled tiles can replace them, reducing waste over time. Interface is committed to taking less from the environment, as their carbon footprint is nearly zero, and they continue to find new ways to be sustainable. RTB used "Entropy 7232" tiles.

VENEER STONE WALLS were crafted with materials from fields in Massachusetts, Connecticut, and Rhode Island, harvested by Delgado Stone and cut to veneer in Connecticut.

LANDFILL LINER SHINGLES were created through an experimental process, resulting in over 6,000 upcycled roof shingles, transforming unused local landfill liner into an essential resource. The project put to use an unwanted material and local labor.

BLUESTONE WALKWAY & COURTYARD utilized attractive bluestone quarried in Pennsylvania. It was beautifully laid by Atlantic Landscape Design & Construction of Dartmouth, MA, owned by Peter Bullard, adding rural character and color to the building.

FIELDSTONE pulled during foundation work was used along with regionally-sourced supplements to craft beautiful retaining walls and other surfaces throughout the structure.

BUYING LOCAL

When we buy local, money remains in our community, empowering our neighbors to better the home that we all share. Local circulation of our financial resources is the lifeblood that revives industry, opportunity, creativity, and culture—all while reducing carbon consumption. It was thus imperative for RTB to invest in local labor and materials in the construction of the Learning Center.

"WHEN ONE TUGS AT A SINGLE THING IN NATURE, HE FINDS IT ATTACHED TO THE REST OF THE WORLD." - John Muir

MILROC HEIRLOOM FLOORS of Holliston, MA navigated the supply chain for us and helped us pick beautiful oak flooring. Our oak flooring, while from Pennsylvania, was installed by Corea Flooring of Framingham, MA. We opted to use various lengths and widths of character grade white oak, thereby celebrating, rather than discarding, pieces with knots or other 'blemishes'. This practice resulted in less waste and more diversity.

TILECRAFT of Fairhaven, MA provided all of our tile needs including advice, sourcing and installation. We chose large, natural tiles for ease of cleaning and maintenance. This family run business is the epitome of quality and good communication.

WINBERG'S TRUE VALUE is a small, family-owned business which has deep roots in and fidelity to the community. It has operated at its Lakeville, MA location since 1981, and provided many tools as well as all of the no-VOC paints used in the Learning Center.

HUMPHREY'S BUILDING SUPPLY in Tiverton, RI, has been in business since 1885 and provided Standing Seam Metal Roofing for parts of the complex, as well as french doors and windows.

GURNEY'S SAW MILL in Freetown, MA provided excellent customer service and supplied pine beams, pine wall boards and all white oak decking.

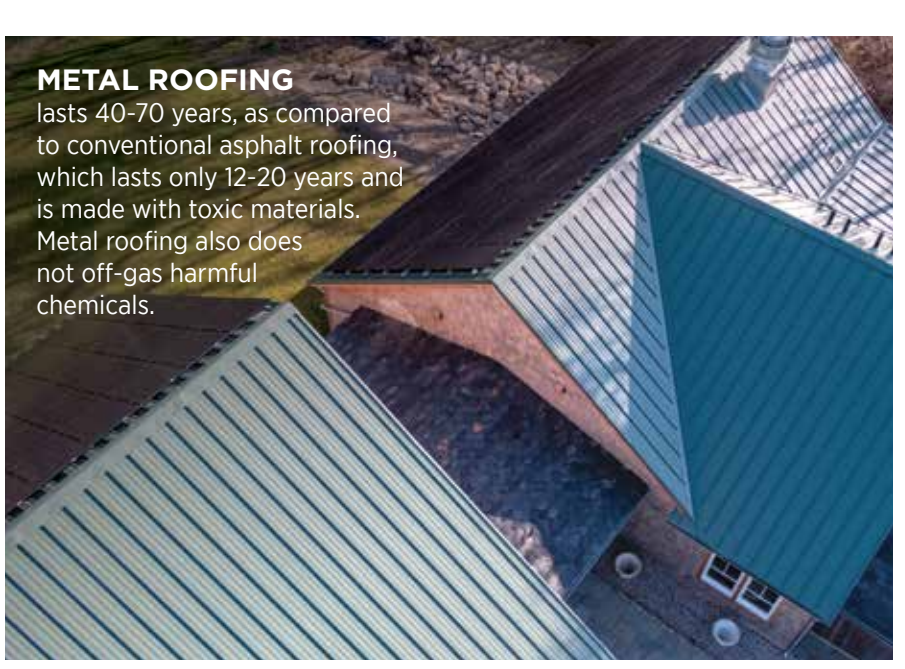
CREATING HEALTHY SPACES

From stains and paints to insulation and flooring, the impact that toxic products have on the human body and the environment is astounding. The "cheap" price that society pays for common construction materials ignores countless externalities. But there are options—small choices add up and these impacts are preventable. At RTB we choose clean air and clean water, we choose products that model nature's intelligence, look beautiful, and challenge outdated norms. Rather than choosing toxic products that are ubiquitous and cheap, RTB invests in a healthier and more environmentally-conscious future, for the benefit of the earth and all its inhabitants.

HAND-CRAFTED CEDAR BATHROOM STALLS by Will Traubel of Will's Building in Dartmouth, MA avoided the use of traditional toxic plastic or metal, both of which are easily damaged and not easily fixed. These stalls are made from red cedar which is a renewable resource, naturally water-resistant and easily repairable, with no harmful off-gassing.

"IN OUR EVERY DELIBERATION, WE MUST CONSIDER THE IMPACT OF OUR DECISIONS ON THE NEXT SEVEN GENERATIONS."

- Great Law of the Iroquois Confederacy



HERITAGE NATURAL FINISHES for wood are perfect for high-quality natural building, and are made primarily of orange oil, tung oil, linseed, pine resin and beeswax. All Heritage Oil Finishes are non-toxic, biodegradable, and sustainable. They utilize no heavy metals or drying agents, and because of this, they penetrate deeper than other finishes.

NO-VOC PAINTS "Natura" by Benjamin Moore eliminated harmful volatile chemicals that paints often off-gas, making the most environmentally- and human-friendly option for use on our building ceilings.

ROCKWOOL INSULATION is more sustainable and longer-lasting than commonly used cellulose. It resists mold, mildew, fungus, moisture, fire, and rodents. It's produced with natural stones (60% recycled) which don't off-gas harmful chemicals, and offers an R-value of 4.13 per inch, and STC ratings as high as 69.

ETHERNET avoids exposure to the electromagnetic frequencies emitted by wireless internet, which scientific studies have linked to sleep disturbance, reproductive dysfunction, and possibly cancer. RTB believes that disconnecting from our devices is not only healthy, but also important for our relationships and mental well-being.

DARK SKY OUTDOOR LIGHTING diminishes light pollution, maintaining the important human experience of the subtle sights and glow of the night. For this reason, "Dark Sky" lighting has been used to provide the necessary illumination, without impeding views of the stars and night critters!

WOOD

With the utmost respect for the trees that inhabit the RTB property, and the role that trees play in ecology, human health and culture, RTB set out to use wood to its "highest good" throughout the Learning Center. This means (aside from it being alive) integrating a tree in its fullest possible form. To this end, grand whole-tree support pillars grace the courtyard. Hand-crafted accents from trees felled from the building site, such as red oak trusses and cedar and oak knee braces, offer integrity and elegance. As for the surrounding mature trees, they were carefully integrated in the site design, as yet another gesture of reverence and respect.

RED CEDAR EXTERIOR SIDING is one of the most durable, renewable materials for this purpose. We chose red cedar for its water-resistant and anti-fungal qualities, making it a safe and non-toxic siding solution.

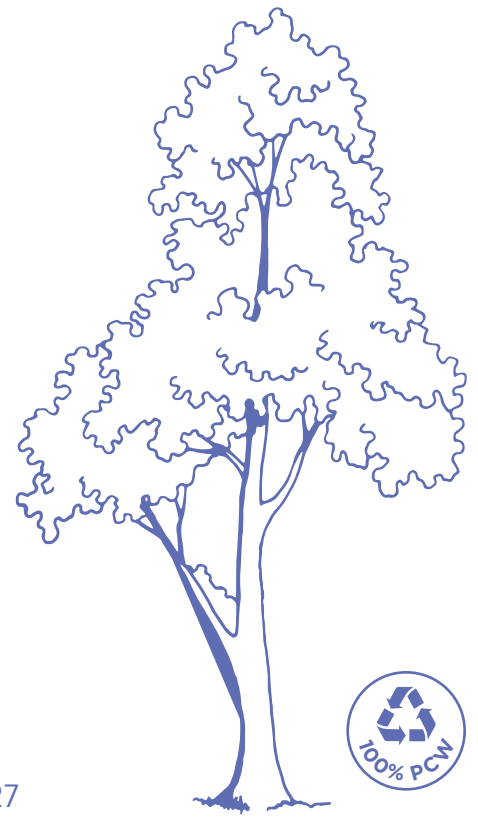
POST & BEAM CLASSROOM utilized one of the oldest forms of construction, as this holistic building approach maintains the integrity of the wood and can last for many generations. The strong joints made possible by traditional techniques create a frame that can withstand even the strongest New England storms. The Learning Center's framing is a stand-out architectural feature and teaching tool for visitors, thanks to design and construction by South County Post & Beam of West Kingston, RI.

PINE WALL BOARDS use an abundance of materials that smell and look beautiful and will decompose naturally, instead of the conventional, manufactured materials that are a major culprit of off-gassing and carbon pollution.

LIVE-EDGE TRIM shows the beauty and "imperfections" of wood and reduces waste. Teammate Tyler See (pictured to the left) milled, planed and sanded most of this wood on-site, allowing us to celebrate the use of juniper/red cedar, sassafras, red oak, and black cherry trees felled on the property and from the surrounding community.

"UNTIL YOU DIG A HOLE, YOU PLANT A TREE, YOU WATER IT AND MAKE IT SURVIVE, YOU HAVEN'T DONE A THING. YOU ARE JUST TALKING."

- Wangari Maathai



A SPECIAL THANKS *to Ellen and Duncan McFarland and all of the hands, minds and hearts that helped to shape and manifest this labor of love.*

PHOTOGRAPHY: Erik Kowalski

ROUND THE BEND FARM A CENTER FOR RESTORATIVE COMMUNITY

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