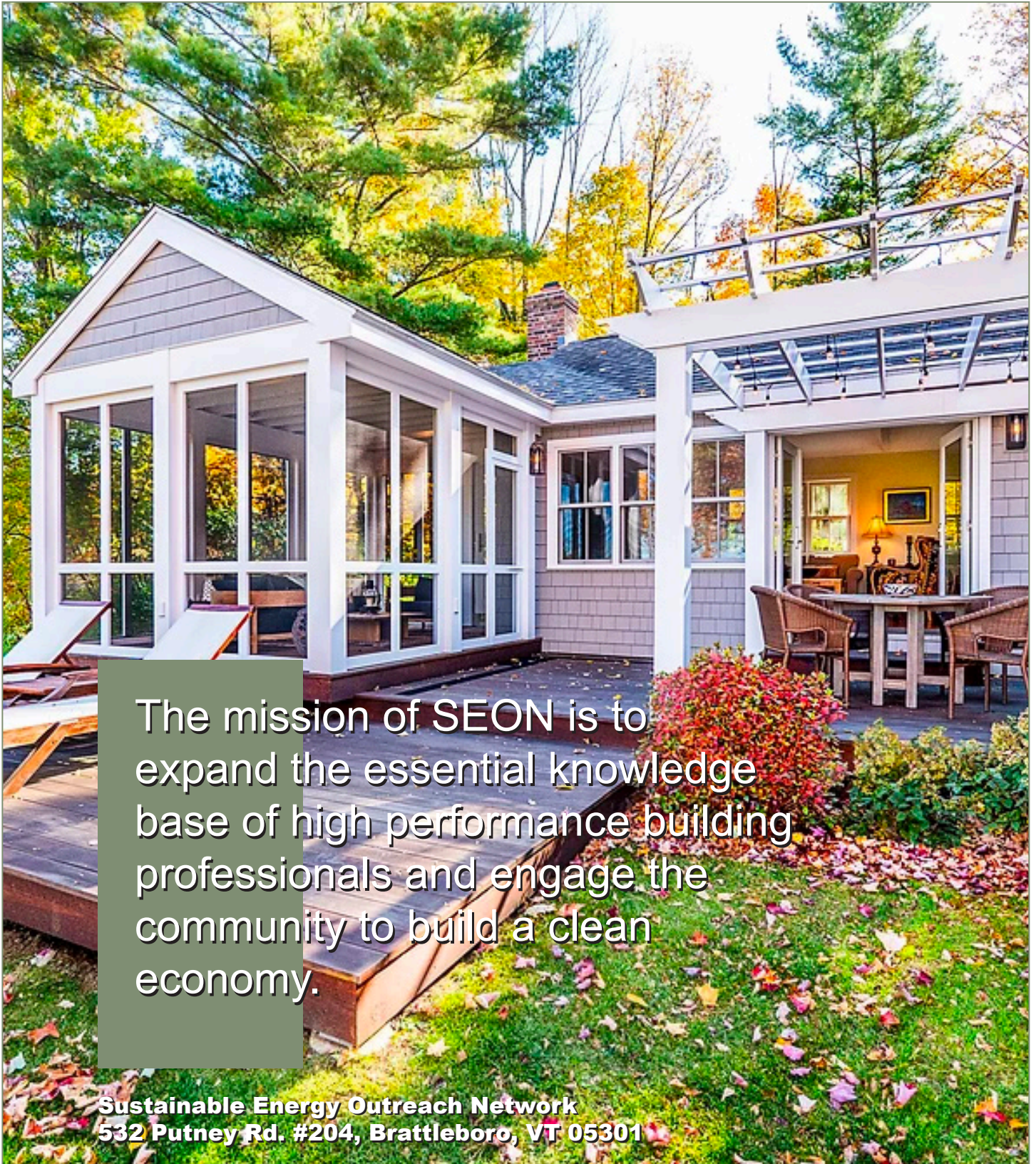


# SEON

## 2023 Annual Report

[buildingscience.org](https://www.buildingscience.org)



The mission of SEON is to expand the essential knowledge base of high performance building professionals and engage the community to build a clean economy.

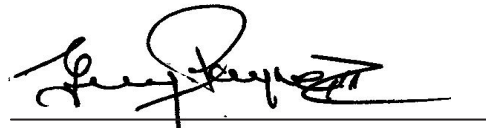
**Sustainable Energy Outreach Network**  
**532 Putney Rd. #204, Brattleboro, VT 05301**

# Overview

The Sustainable Energy Outreach Network's (SEON) principal mission is to expand the knowledge base of builders and carpenters in the area of building science so homes and living units are energy efficient, durable, and meet the needs for indoor air quality, health, safety, growing in place, minimal embodied energy of products, and comply with the state's Energy Code.

This workforce development mission is uniquely SEON's, and there is no other trade association in the state of Vermont with this distinction. While studies and legislative committees have advocated the need for training in the homebuilding industry, SEON is the only organization offering training, leading to certification, in building science and high performance building to the state's builders and carpenters. Other organizations like Efficiency Vermont offer specialized and topical training, but only SEON delivers in-person training for certification for those doing the installations.

A cultural shift is necessary for our builders and carpenters. Because of our climate and now housing crisis, SEON is advocating that our builders go beyond thinking of themselves as trades people and craftspeople, but as professionals, professing education, continuous learning, and a code of ethics. Our climate crisis requires builders to see themselves professing a standard that is bigger than themselves; a commitment that is essential for Vermont. That code may be adherence to the state's Energy Code and their own statement of values that define their organization's purpose. With Vermont's ranking in the 10 best states to live, our professional builders need to be prepared to meet the expectations of our newest citizens as well as those who choose to stay, but need improvements to their homes.



**Guy Payne**  
Executive Director, SEON

## Accomplishments .....

In 2023 we introduced our new part-time Marketing Director, Sarah Gilbert Fox. She has been instrumental in:

- Setting up our training schedules for the spring and fall in 7 technical centers throughout the state
- Giving greater focus to the public on the criticality of Building Science, and in words the public understands
- Completely reformatting our website along with a new logo
- Developing our monthly newsletter and getting it distributed. She has expanded the newsletter to include the accomplishments of our members
- Expanding to social media platforms of Facebook, Tik Tok, and Instagram to include visibility to a younger generation

In April, Guy Payne was one of the speakers for the Secretary of State's Press Conference announcing the Contractor Registry program SEON rolled out a new course Crew Leadership Development: Mentoring Skills to Develop and Retain Your Workforce. The rollout of this course was preceded by a brainstorming session of 3 builders. An outcome of the course is a contract to work with a construction company in northern Vermont to deliver it in-house to superintendents and project managers.

Guy Payne provided additional input on training to the legislative committee Building Energy Code Study Committee. The report was published December 1, 2023.

Sarah and Guy worked collaboratively to submit Commentaries on Building Science to the major media outlets in the state

Sarah and Guy provided Rep. Michelle Bos-Lun with input in the formation of her bill on Permanent Supportive Housing. We encouraged the inclusion of workforce training Working with the Head of School of the Compass School, to enhance their secondary school curricula to Include hands-on exposure to the trades. In addition SEON tabled at 2 Career Fairs at Twin Valley High School and Bellows Falls Union High School. Finally we also tabled at the Marlboro Energy Fair with help from our Board Chair, Jonathan Morse and SEON member Anthony Girard.

Sarah and Guy are working to form a coalition of all state homebuilding non-profits to develop a state-wide certification program as a high performance builder with an emphasis on building science. Secondly, to promote the education of the public about the criticality of hiring contractors committed to continuous learning of building science. Participating organizations include: Efficiency Vermont. Vermont Builders and Remodelers, Associated Building Contractors - VT, Association of General Contractors -VT, Building Performance Professionals of Vermont, Passive House Vermont, ReSource, Vermont Talent Pipeline, Vermont Green Building Network, and Vermont Works for Women. We are planning our first meeting to be in January 2024.

## Accomplishments since May Retreat .....

- **Board Development:**
  - Recruited two new Board Members with state-wide legislative/policy experience.
  - Developed testimonials from two members on the value and impact of the training.
- **Research and Preparation:**
  - Conducted research on other state mandates.
  - Created a Board engagement folder.
- **Advocacy and Communication:**
  - Developed strategies to stimulate intellectual curiosity among builders.
  - Finalized the first draft of a framework for a Northeast Building Science Coalition.
- **Course Development and Marketing:**
  - Sarah has led efforts in organizing events through Eventbrite and creating social media content.

## Tasks in Progress and Next Steps (2-6 Months) .....

- **Certification and Training:**
  - Submit required paperwork for SEON to be an Eligible Training Provider.
  - Explore the Workforce Innovation and Opportunity Act (WIOA).
  - Fill classes and ensure 10 builders/carpenters complete their certifications.
  - Develop additional training sites and locations for Control Layers class.
- **Stakeholder Engagement and Advocacy:**
  - Develop a response linking FEMA to our mandate.
  - Explore sponsorship of training with local lumberyards/home centers.
  - Inform Windham County State Delegation of our mandate.
  - Gain commitments from homebuilding organizations to serve as advocates.
- **Financial and Organizational Goals:**
  - Achieve membership revenue budget projection of over \$9,000.
  - 75% of classes to run with incentives.

• **Longer-Term Goals (1 Year):**

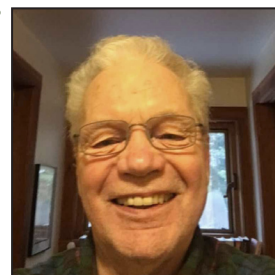
- Build momentum for the initiative.
- Train additional instructors.
- Have legislators include our mandate in their platform.
- Gain support from the Secretary of State and AG's Offices for the mandate.
- Ensure the mandate is entered in the next (2024) legislative session.

## Summary .....

This breakdown highlights the significant progress made since the May retreat, including board development, research, advocacy efforts, and course development. The report also outlines ongoing tasks and future objectives, emphasizing the initiative's momentum and strategic direction towards establishing a state mandate for high-performance building certification. The report reflects SEON's commitment to education, collaboration, and advocacy in promoting advanced building practices in Vermont.

## Board .....

"I am a charter member of SEON, as well as a building professional with 35 yrs experience highlighting energy efficiency and sustainable design. I am committed to increasing the knowledge and expertise of building professionals, from the newest recruits to owners of contracting firms in Northern NE. It's very important to me to attract curious and enthusiastic workers to our profession." **Jonathan Morse**



"SEON's unique differentiator is that it was launched by a group of curious and engaged practitioners who wanted to share lessons about building science. Today, we have formalized that sharing by offering courses and classes to a wider audience. But this sharing always been grounded in practice, and real conditions seen in the field as we try to decarbonize and create healthier living environments in our cold climate."

**Candace Pearson**

"There's a lot of important work to be done to realize a sustainable future for our built environment. There's a series of problems in our industry that need the innovative thinking SEON nurtures. It's exciting to see legislation like California Bill SB 253 that requires scope three reporting in the building industry by 2027. Now is the time to work with SEON to take make the most of those structural shifts (and others!) within our community." **Jason Van Nest**



"In recent months, we've embraced the significant challenge of advocating the huge, elephant-in-the-room sized challenge of needing significant top-down mandates at the State and Federal levels, aiming to enforce code compliance, builder certification, and other industry essentials. SEON has developed a robust education system, but we eagerly await broader participation. While some factors are beyond our control, our unwavering advocacy continues, focused on securing tangible State support. Although it often feels we are in a state of limbo, SEON is actively catalyzing transformative change, shaping the industry's future." **Gary Swindler**

# Members . . . . .

**Owl's Head Builders** "One thing that isn't directly building-related, but I've been very pleased with, is Rich Earth Institute's portable toilets. They're "pee-cyclers," a nice alternative to the traditional chemical-laden options. They essentially recycle all the human waste. They collect it, transport it to a facility in Brattleboro, where they turn the manure into compost and the urine into fertilizer. It's a novel approach in an industry that tends to be wasteful, no matter how green we try to be. And let's be honest, jobsite toilets are rarely discussed, but they have to go somewhere, and the harsh chemicals most portapotties use are gross and smelly. Rich Earth Institute ditches those chemicals and uses sawdust instead. So, it smells like sawdust! They're a local company based in Brattleboro, Vermont. Check them out if you're looking for a more sustainable and less smelly solution for your next project." **Jethro Eaton, Owl's Head Builders**



**Sustainable Design** "My wife and I have just about completed a 5-year deep energy retrofit/renovation of our now home/office. The original farmhouse we renovated was built in 1860. To make it work as both our home and our office, we have added a few small additions; a mudroom, a kitchen and a small attached greenhouse. Our standard was to exceed the current Vermont Energy Code in every aspect of the renovation.



We removed both chimneys on the outside and eliminated all combustion in the house; HVAC, cooking, hot water, and clothes drying included. We now heat and cool the building with a ground source heat pump, have an induction cooktop, and use a heat pump dryer.



Our goal was to reach NET ZERO with our community solar, but we are a couple panels short and do have a small electric bill, but only for the winter months. Otherwise it's \$0 a month for heating, cooling, ventilation, lighting, cooking, hot water, lawn mowing, etc.

My wife and I sided the new additions with local slate shingles. Doing the work ourselves was a rewarding experience. Knowing that we will never have to scrape, paint, or maintain the siding for a couple hundred years is the icing on the cake. **Alan Benoit, Sustainable Design, LLC.**

**HELM Construction Solutions** Dear SEON members and friends,

HELM appreciates being part of this community in our Southern VT region and the invitation to share what we've been up to this year. Finding ways to stay connected with others in the construction industry who are passionate about climate justice is so important and we want to thank SEON for creating a space for that.

We've been working hard and expanding our efforts to offer business consulting, coaching, project management and training to a larger audience. Our team has grown to 23 wonderful individuals collaborating together to carry out our purpose to "Revolutionize construction. Building business resilience through innovative services, thoughtfully delivered by our team of industry experts." We are honored to have the

privilege of working with nearly 70 companies across 17 states and 2 countries (including some of you!). We love our clients. They are amazing and bring so much leadership to the high performance building world.

We wanted to share two big highlights from the year:

1. HELM is so excited about our new partnership with NESEA, to support Minority and Women Business Enterprises in the clean energy sector through a grant from the Massachusetts Clean Energy Center. This new program, called BuildingEnergy Access, will combine professional services from HELM with participation in a peer network cohort and NESEA programs in Massachusetts over a three-year period, at no cost to participants. Please help us spread the word.

2. Save the date: Saturday, September 21, 2024 for our 3rd annual HELM & Friends Hike\*-A-Thon. This year we raised nearly \$5,000 for our Solidarity Fund to provide low and no cost services to BIPOC, LGBTQIA+, and woman owned construction and design companies. Thank you SEON for helping us to publicize this event. We hope you'll all join us next year.



We love seeing and hearing from other SEON members. What are you up to? What challenges or successes are you facing in your businesses and on your projects? Thanks for being in this with us.

p.s. There are still spaces available in our upcoming Construction Business Basics course. Check it out.

p.p.s. Want to stay in touch, sign up for our quarterly HELM newsletter.

Happy New Year,

**Mel Baiser & Kate Stephenson, Co-Founders, HELM Construction Solutions**

**Shelterwood Construction** “We had a great tour of the TimberHP mill in Madison, Maine a few weeks ago to learn more about their local wood fiber based insulation they are producing from local forests. That was a highlight to be amongst 10 industry leading builders and architects for two days learning and touring.”

**Colin Lindberg,  
Shelterwood Construction**



**WW Building Supply** understands the critical need for the next generation of building trade professionals to enter the workforce. These young people will drive the future of housing, economic development and environmental responsibility in building infrastructure around us. Ed Druke (President) and Jonathan Miller (Inside Sales) have been actively involved with the River Valley Tech Center over the past three years. As members of the Carpentry Advisory Board, they help direct how the program engages and trains the next generation entering the building trades.

This hands-on involvement took a deeper role in October 2022 when Ed and Jon did a complete, hands-on window installation demonstration at the Howard Dean Education Center with the Carpentry Program students. The students had already completed the rough opening framing and our demonstration covered each detail to make an efficient window installation. We covered positive drainage sill construction, flashing materials, proper flashing steps, shimming, nail fin installation, through jamb fastening and air sealing the window. Students did every step of the work and asked questions throughout the process.

Ed and Jon continued building these student relationships when they worked to install shingles on a roof. They discussed the science behind shingle construction, proper installation methods, nailing, wrapping and flashing details and how roofing impacts the performance of the overall building envelope. The students asked questions and participated hands-on with the demonstration, learning not just the information but also practicing the methods required.

The carpentry project status didn't offer any hands-on demonstration opportunities in 2023 but we're excited to do another window installation demo in January 2024. We recognize that wall system openings are critical to the overall performance and efficiency of the house. Reaching students before they enter the workforce and discussing these needs is the best way to prepare them for the future. We're excited to work with this next generation and invest in their success because we know the building trades have such a widespread impact on the strength of our local communities.

### **Steve Wolf, WW Building Supply**

**Thomas McLoughlin** played a pivotal role in the restoration project at Pierce's Hall, an iconic historical landmark in Putney. With extensive experience as a window restoration specialist, Tom's expertise was highly recommended when the hall received a matching grant from the 1772 Foundation and the Preservation Trust of Vermont in 2023. Originally from New Jersey, Tom brought his passion for historic preservation to Southern Vermont in 2007, and it took him several years to establish a foothold in the field. His dedication to energy efficiency and sustainability, as exemplified by his membership in the SEON (Sustainable Energy Outreach Network) Group, became a driving force in his career.

When Pierce's Hall embarked on its community fundraising efforts, Tom was enlisted to restore all 11 windows and the entry door. His meticulous work included replacing muntins and restoring period glass whenever possible. Notably, the project presented a unique challenge with the restoration of the 1831 decorative fans, which were completed through the grant funds. Tom's meticulous craftsmanship was evident in his approach to this intricate task, where each fan blade had its own dimensions, angles, and twists. Despite the complexity of the work, Tom's dedication to preserving historical details shone through.

Thomas McLoughlin's invaluable contribution to the [Pierce's Hall restoration project](#) showcases his unwavering commitment to preserving our community's heritage and historical landmarks through his specialized skills in historic window restoration. **Thomas McLoughlin**



## Unity Homes 15 Questions with Unity Homes

1. Can you explain how Unity Homes is contributing to sustainable and high-performance building in the Walpole, NH, and Vermont areas?

Unity believes the design-build experience should be easy, fast, and result in an energy-efficient home built to the highest standard. A core part of our mission is to create a more Streamlined design-to-build experience, where high performance homes are more accessible and affordable. All our homes are free of fossil fuels and are net-zero ready, meaning they are easily powered by renewable energy sources such as a solar PV system. To date, we have built around 200 homes across the Northeast and beyond that will provide quality, comfortable housing for generations to come.

2. Can you talk about Unity Homes panelized homes. How does this construction method benefit both homeowners and the environment? Could you elaborate on the design and construction process of Unity Homes and how it differs from traditional homebuilding methods?

Unity homes are built using innovative off-site panelization methods that offer distinct advantages to homeowners. In conventional construction, each of the thousands of parts and pieces are cut and fastened together on site. That process has been compared to having the parts and pieces of a car dropped off and assembled in a driveway. At Unity, this work is done under the controlled conditions of our state-of-the-art production facility, where the prefabricated panels and components are then quickly assembled afterwards on site. We also have 5 design platforms with pre-designed plans that are ready to build, decreasing timelines and cost especially compared with building a custom home from scratch.

3. Stewardship of the land is an important aspect of your mission. How does Unity Homes ensure that its building practices are environmentally responsible? Could you explain the significance of off-site panelization in terms of waste reduction and quality control compared to traditional on-site construction?



Sustainability is embedded in every stage of the Unity build process. Every new home is an opportunity to become part of the solution to our changing climate, from walls that store carbon to our net zero ready designs. Unity sources materials very carefully, prioritizing the use of renewable materials such as sustainably harvested wood that is not energy-intensive to manufacture. All the components of our homes are produced in our efficient off site solar powered panel factory in Keene, New Hampshire, where we maximize cuts with fewer materials and reduce construction waste with our

precise machinery. Our Walpole, New Hampshire facility is also heated with recycled wood from our factory, keeping employees warm with thermal renewable energy throughout the winter. Our home designs have open floor plans that allow smaller homes to “live large” without intensive energy needs, with adaptable floor plans that remain functional even if future renovations take place. Internally, we also have incentives to employees for biking and carpooling to work to save on carbon emissions!

4. Unity Homes emphasizes energy efficiency. Can you share some examples of how your homes are designed to optimize energy performance?

Building an energy-efficient, high performance home requires extensive knowledge of building science, thoughtful design, specialty materials, careful construction and strong attention to detail. Finished Unity



homes have predictably low operating costs and comfortable, even temperatures all year round due to the high level of insulation. Our homes are also net zero, easily compatible with solar panels and positioned for maximized solar gain. Each home is air-tight to minimize drafts and heat loss, with efficient ventilation systems and optimal heating and cooling performance. Triple-glazed tilt turn windows are warm to the touch even on cold days and are designed for energy-efficiency. Curated finishes through Unity's Tempo package include super-efficient LED lighting and water-saving plumbing fixtures. All our homeowners experience extremely low energy bills throughout the year, saving money in the long term without reliance on fossil fuels.

5. Many people are interested in healthy and comfortable living environments. How do Unity Homes' designs prioritize the health and comfort of the occupants?

Unity homes are constructed using materials with low-VOC (Volatile Organic Compounds), based on the Indoor AirPLUS program by the Environmental Protection Agency (EPA). Examples include products with less glue or less toxic glue, like our OSB wood, which is made from recycled wood scraps. Our home envelopes are also fully insulated with natural dense-pack cellulose insulation, which eliminates drafts and is fully mold and insect resistant. Each home is air-tight to minimize heat loss with efficient ventilation systems to ensure health. Windows are uPVC, which is a type of PVC that does not contain plasticizers like BPA and Phthalates, so the windows do not off-gas for the occupants while also avoiding condensation problems on the inside of the home.

6. Unity Homes offers both Shell and Tempo package options. Can you clarify what each package includes and how they benefit homeowners?

Choosing a Shell package means that Unity prefabricates and assembles the high-performance, weather-tight building shell (including windows and exterior doors) and the interior partition wall framing. A client's general contractor then completes the exterior and interior finishes of the house. This package delivers the main envelope of the home while allowing the clients to fully choose their own path with finishes. Choosing a Tempo package means we supply the same shell, plus a selection of finish materials and fixtures specifically curated to complement the design of your home. This saves a lot of time since clients don't have to visit different suppliers or websites to pick out their finishes. Unity also takes care of all item deliveries right to their site where the local general contractor will install them. We also provide warranty service follow-up with all Tempo items to help with that extra layer of support.

7. Predictability seems to be a key aspect of your approach. How does Unity Homes provide cost predictability and peace of mind to clients?

When it comes to building a house, predictability is a tremendous benefit in an otherwise chaotic industry. Unity's design system allows for a great deal of predictability and peace of mind because it is based on standard platforms and pre-designed components. We guide clients through the entire home building process from permitting to finding a General Contractor. As clients finalize their floor plan through our Streamlined design path, we are able to provide accurate shell costs because we know how the home will go together and how long it will take to build. At the conclusion of the design process, we provide a fixed-price construction contract so you know exactly how much your home will cost upfront to stay within budget. Building the home components in controlled conditions within our shop takes away the unpredictability of building from scratch in inclement weather. The assembly of our homes on site happens predictably and quickly—typically in a matter of days—with our highly skilled Building Systems crew who know the assembly process inside and out.

8. Unity Homes is a member of SEON. How does collaboration with organizations like SEON contribute to your mission and goals?

We value partnering with like-minded organizations like SEON to advance awareness of the benefits of energy-efficient homes for both people and the planet. The more resources and education available for potential homeowners the better, so they can make informed decisions as they pursue building a home for their families.

**9.** Can you share some success stories or testimonials from homeowners who have experienced the benefits of Unity Homes?

Many of our clients stay in close contact with us long after their house is finished. Here is a testimonial from a Unity Xyla homeowner in Alstead, New Hampshire “It wasn’t just the ease of the process that impressed us – it was everyone’s attitude as well. We can honestly say that we had a really good time with the designing and building of our new home – and who says that?” -Sarah, a Unity Xyla homeowner

**10.** Looking to the future, what innovations and developments can we expect from Unity Homes in the realm of sustainable, high-performance building?

Unity is excited to announce an important milestone in how we approach the design-build journey with clients. To help address barriers and inefficiencies to quality homebuilding, we have been working with a software development team to create a new innovative software platform called Seamless. This software is now a separate independent company and we are proud to be their first Beta customer.

Seamless was designed to change how houses are built across the entire home building industry, by allowing real-time design and estimating using a library of standard components correlating to our production capabilities. Starting on a map of the actual build site, Seamless is able to assemble components that meet the client’s needs and conform to their site. What used to be a long and labor-intensive process of designing and estimating, can now be visualized immediately. While Seamless is still under development as a startup, we celebrate this important milestone for them, for us, and for the home building industry as a whole. We are excited to see how Seamless will turbocharge the Unity Homes building journey, speed up design decisions, enhance real-time visuals and lower costs so more people can live in a comfortable, secure and energy-efficient home.

**11.** Do you have any apprenticeship opportunities?

Bensonwood, the umbrella company of Unity Homes, Tektoniks, and OpenHome, has received approval by the US Department of Labor to launch a Registered Carpentry Apprenticeship program starting in the summer of 2024. We will be joining other New Hampshire construction companies in sponsoring a 3-year Registered Carpentry Apprenticeship program, which originally launched in 2021 by Apprenticeship NH. Apprentices will be full-time employees with benefits, receiving on-the-job training and mentorship from experienced carpenters while taking related classes at NHTI-Concord’s Community College. Our hope is to encourage more young people to learn this profession and pursue certification while getting paid.

**Unity Homes**

