INNOVATORS AND INNOVATIONS

BY HEATHER MOONEY

The application of Building Science to a mountain home brings the detail that lets the home thrive in its environment. While building methods or aesthetic design may be universal, the application of these to the home and the unique opportunities of its location are where the fine-tuning happens for ultimate comfort and satisfaction. Williams Partners Architects solves for this through a holistic view of the home within the site, embracing the philosophical and the tangible in creating space. Bashista Corporation, a general contractor, addresses building science through a team approach, providing the best of all worlds by working together to bring out the strengths in each aspect of the building process. The Thermal Envelope Company brings an extensive engineering background to define the invisible, delivering high-end comfort with an unconditional guarantee. Giving attention to building science, and looking at a home as a living organism that interacts with its inhabitants and the environment, allows for improved performance and efficiency and is exactly what these companies deliver.

WILLIAMS PARTNERS ARCHITECTS

RESPONSIBLE DESIGN IN PERSON AND PLACE

"WE ASPIRE TO BE KNOWN FOR RESPONSIBLE DESIGN. RESPONSIBLE IN TERMS OF GIVING CLIENTS THE HOME THEY DREAM OF AT THE COST THEY PLAN FOR, RESPONSIBLE IN TERMS OF WORKING WITH THE SITE AND THE ENVIRONMENT."

–Jeff Williams, Founder, Williams Partners Architects

When it comes to home performance, all the technology and insulation in the world is irrelevant without a comprehensive understanding of what it is insulating from, and of the climate the home is engaging with. Known for award-winning homes, Williams Partners Architects addresses each of their projects with a holistic view, integrating comfort and efficiency in a home that is perfectly suited to its location in the Wood River Valley. Jeff Williams, founder, and Caleb Spangenberger, AIA, share their approach to engaging the whole picture of the home. "We aspire to be known for responsible design. Responsible in terms of giving clients the home they dream of at the cost they plan for, responsible in terms of working with the site and the environment," says Williams. By implementing their philosophy of integrated sensibility, Williams Partners Architects delivers homes that are well situated to their environments as well as beautiful and comfortable to live in.

The envelope of the home, the place of intersection between the outer environment and the interior space, is not limited to this functional definition. Williams sees the envelope as an important aesthetic piece. "Aesthetically, the envelope of the home is a reflection of our clients' aspirations; it's a container for their lives and their legacy," says Spangenberger. The envelope is the first place of engagement with the home. "It is the datum at which ideas become visible, tangible," notes Spangenberger. While many technologies exist to seal a home from the elements or keep it warm inside, Williams Partners approaches the envelope from a philosophical level, bringing that to the practical.

Williams Partners considers their intimate knowledge of the location a strength in designing thoughtful, functional envelopes. "These days, people are asking for more and more glass, but how this is done is key to maximizing comfort. Rarely do imported design concepts work without some modification or complicated mechanical systems to balance with our unique environment," says Williams. Their direct understanding of the climatic circumstances of the Wood River Valley give them the expertise to fine-tune the client's desired aesthetic to perform well in its location.

Targeting both comfort and efficiency, Williams Partners addresses heating and cooling with solutions to cut consumption. "Radiant heating and cooling are efficient methods to achieve the level of creature-comfort that the client craves in this climate. Heating objects (such as floors) requires fewer resources than simply focusing on air temperature alone," says Williams. With comfort as the ultimate goal, it is also convenient when the most efficient way to do it is also the most comfortable.

Williams Partners also uses Building Information Modeling (BIM) to analyze a design's energy demand early in the process. While BIM is a useful tool to share 3D imaging with a client for design understanding and conception, it also integrates this whole process of how materials and design choices affect performance from early in the phases. "Digital solar studies demonstrate the effect of placement and orientation of both glazing and shading devices. WUFI simulations show how much heat and moisture move through dif-

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ferent construction assemblies, enabling architects to tailor envelopes best suited for any particular micro-climate," says Spangenberger. Since Williams prides themselves in knowing the micro-climate, they can apply the models to the exact space in a way that performs best.

Working with their clients to meet budgets with the best outcome, Williams Partners sees boundless options for creativity, and continues to bring them into projects as feasibility allows. They see that ultimate environmental integration is the most efficient and are excited for the day when clients find that to be part of their dream too. "Solar technology increases in efficiency every year. Utilizing the sun reduces a project's dependence on the grid, avoiding service interruptions and lowering operating costs; passive designs are often overlooked due to up-front costs, but have a proven track record of return; green roofs insulate the building and reduce storm water runoff. Used effectively, they can improve the aesthetics of what could otherwise be an unattractive component of the project," says Williams. While many of these features often aren't implemented due to cost, Williams Partners has a large toolbox of efficient technologies. They carry this creativity to their use of different materials as well. "The palette of materials we employ is no different than what is available to any other office, we just strive to use them in new and interesting ways. In this valley we have the luxury of access to skilled tradespeople interested in doing unique work, and that makes coming up with new installations more feasible," says Williams.

Williams Partners prides themselves in constantly learning and innovating, with each of the homes they build performing better than the previous. They live by the principle that a home performs its best when integrated, just like a human being, when it is in balance with the environment it lives in, and the nature within it. Williams Partners' approach is their capital, and their conceptual prowess results in homes that fit into the environment and perform appropriately, reflecting the whole being and vision that the client embodies themselves.

BASHISTA CORPORATION

A SUM FAR GREATER THAN ITS PARTS

"WHEN YOU UNDERSTAND THE POTENTIAL OF A PRODUCT, PLANNED EXPERIMENTATION CAN BE REALLY EXCITING. WE'VE REPEATEDLY EXCEEDED EXPECTATIONS (SOMETIMES EVEN OUR OWN) BY KNOWING WHAT A PRODUCT IS BUILT TO DO."

–Shane Lago, Owner, Bashista Corporation

When looking for a high-end custom homebuilder in the Wood River Valley, all recommendations point to Bashista Corporation. Bashista addresses the growing complexity of homes through thoughtful integration of each aspect of the building process, from client to material choice to application. "We achieve high-quality homes through our collaborative approach, with the architect, client, electricians, HVAC installers, insulators, roofers, and siding crews all working together to see the project as a whole system from the beginning of the process," share Josh Glick and Shane Lago, owners of Bashista.

As home systems have evolved, so has the network of skilled craftsmen. Bashistas's nearly 45 years of experience brings with it a trusted circle of like-minded specialists. "That's the science. Those of us building homes need to completely understand how they work and it's impossible for any one builder to know the intricacies of each system. This is why we bring in the team early," says Glick. Over the years of growing complexity they have learned that working together with experts enables them to predict performance, avert issues, and achieve client goals, even when it's never been done before. "When you understand the potential of a product, planned experimentation can be really exciting," says Lago. "We've repeatedly exceeded expectations (sometimes even our own) by knowing what a product is built to do."

Bashista achieves the highest level of efficiency and comfort through an understanding of how each element is going to perform within the whole. Bashista's ability to integrate place-based knowledge into thoughtful application for each home's unique demands consistently results in superior quality. "We pay attention to the details. We know the products we use. We know what they're supposed to do, and make sure that the right products are applied in the right environments," says Lago. When it comes to the building process itself, each assembly is tailored to the client's goals. "We can look at what they're proposing, and know how it will (or how it won't) perform," says Glick.

Knowing how everything fits together by taking an integrated approach from conception gives Bashista the perspective necessary to stay ahead of any challenges, providing a smooth construction process that they take pride in. "We stand out by catching the little things before they cause issues or delays," says Glick.

The breadth of knowledge garnered with years of experience allows Bashista to fine-tune the construction process for performance. Specifically looking at numbers, Bashista maintains standards of efficiency that surmount code requirements. "We make a point to ensure that a house is functioning to the highest level. There used to be no standards, and we know from early on that a little extra effort makes a big difference," says Lago. "By looking at this early in the process, not only does the end result become more efficient, but the process of attaining it is smoother."

Above all, Bashista's customer service speaks volumes for the value of their work. "We don't just build the home and move on. It's a piece of art. Clients get the attention they deserve for the home they've been dreaming about. Sometimes they've been dreaming about it their whole lives," says Glick. "We want to make those dreams come true."

Bashista prioritizes their clients by allowing themselves the space and time to truly invest in each project. By deliberately managing their workload, they not only improve performance, but also keep clients as the top priority. This affords Bashista the ability to stay at the forefront of new products, techniques, technology, and science. "We're able to take the time to listen to what industry experts are trying to tell us, or what a subcontractor is sharing. What might look like a sales pitch is often an education. We pride ourselves on taking the time to engage in that conversation," says Glick. "Our philosophy is to never stop learning."

Their 'big-picture' mindset has built a foundation that elevates each Bashista client into the spotlight while allowing the company to stay at the forefront of technology. As a result, they repeatedly deliver exceptional homes and develop relationships that can withstand the test of time.

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THERMAL ENVELOPE COMPANY

COMFORT, ENGINEERED

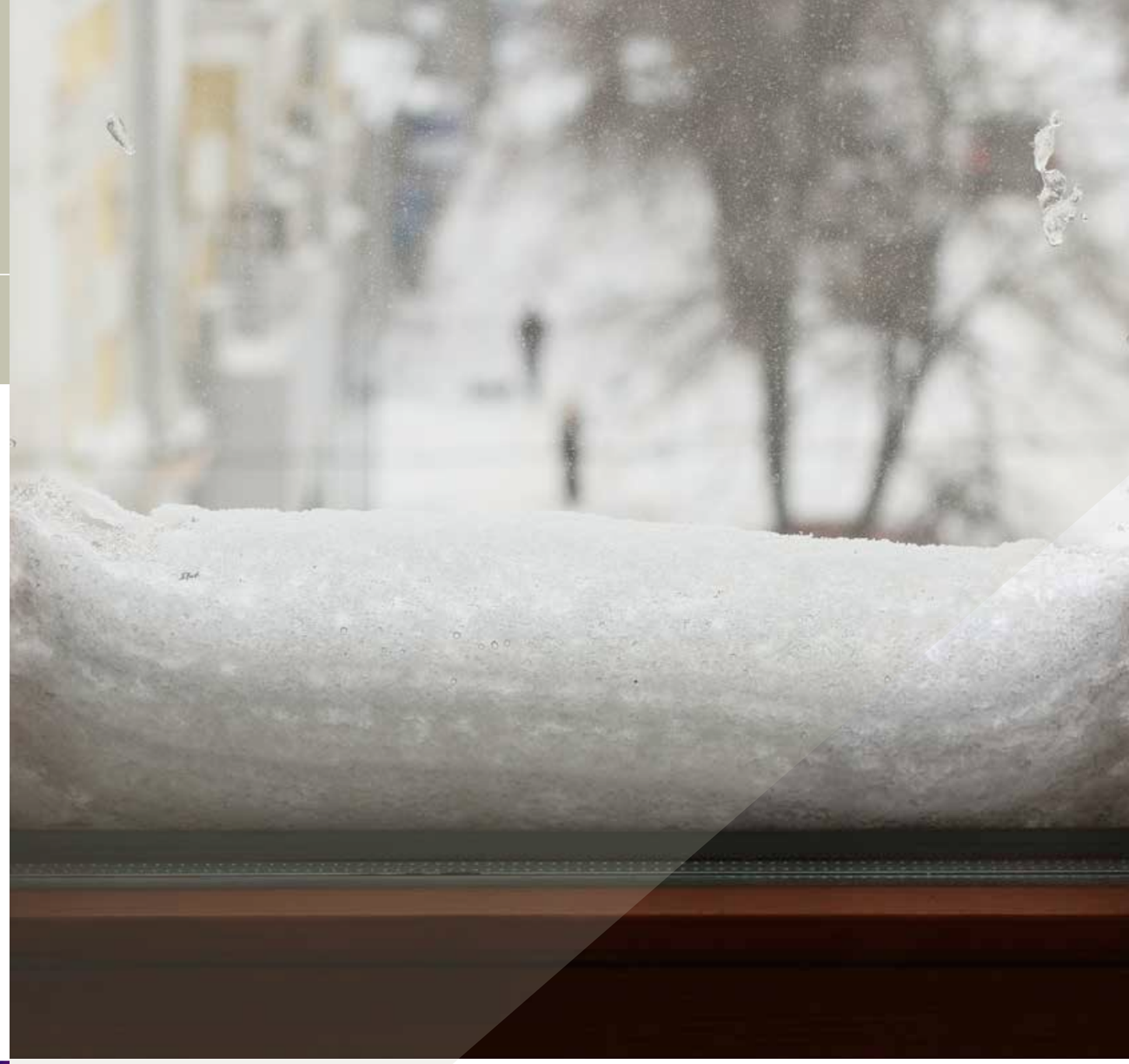
Comfort. All humans seek it, yet it can be difficult to articulate objectively. As expressed by the glowing testimonials from their clients, the Thermal Envelope Company (TEC) engineers the intangible for perfectly fine-tuned comfort. Homeowners choose to work with TEC because they take the comfort of their homes seriously and TEC delivers. Through scientific investigation, measurement, and innovation, TEC offers exceptionally comfortable spaces in the most extreme environments. Combining a deep understanding of comfort's fundamental nature with a honed scientific approach, TEC's work is embodied in their slogan, "comfort, engineered."

TEC founder Art Carlson attributes their revolutionary technology to his career as an engineer at IBM. "IBM has the reputation of being innovative, creative, taking chances, taking risks, and spending money doing it. I was trained by the best," says Carlson. The concept for the Thermal Envelope Company came to him as he was building his own home 15 years ago. "I built my home by myself without the burden of construction industry traditions, which caused me to lean on my own ingenuity and experience to solve problems, sometimes in non-traditional ways. You can change the story, but you cannot change physics." Carlson brought his scientific understanding to life in construction, drawing inspiration from IBM's use of reflective technology to protect circuit boards. "We use similar science in the home to do what no one has done before, keep the heat inside," says Carlson.

The TEC Gen9 System is simple yet profound. "TEC presents a concise, clear, patented method to prevent heat from entering and leaving the building. Our patented assembly gives advantage in the marketplace because it does just that, it stops heat." They combine two elements of well-established technology, closed cell spray foam and reflective technology, in radiant barriers. "These two products have never been used in the fashion they're used now," says Carlson. TEC seals the building, keeping the weather out, and the heat (or cool) in.

While most insulation acts as merely a barrier that slows down heat transfer, TEC employs technology of reflection to reflect heat energy back into the space, or to the exterior, rather than absorbing it. A brief thermodynamics primer from Art Carlson includes, "Light from the sun is only energy; it is not light until it hits an object that becomes illuminated. Radiant energy acts the same way, delivered as heat; it only converts to heat upon hitting an object with mass."

IMAGE OF A THERMAL ENVELOPE COMPANY HOME RETAINING HEAT.



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TEC's Gen9 System allows radiant heating systems to perform even more efficiently, adding to the home's comfort. "Radiant barriers reflect 95% of the energy wave that will soon become heat. We embed an energy reflector in the entire thermal envelope of the home," says Carlson. With this mirror-like technology, heat is reflected to the interior in winter, maintaining a constant temperature throughout the home.

The Gen9 System also prevents issues with moisture. With a tight comprehensive seal, moisture does not infiltrate the wall structure. Problems caused by moisture are created when warm water vapor is cooled, causing condensation. Because the Gen9 System separates the outdoor environment from the interior, there's no temperature gradient within the wall, and hence no issue of water damage," shares Carlson.

Carlson shares that the Thermal Envelope Company is constantly raising the bar, as motivated by advice from his Swedish grandfather: "If you do not measure it, you cannot change it." TEC measures relentlessly to know exactly how their technology is performing. Carlson explains, "We have an entire industry that shuns thermal envelope measurement because you might see that it's not doing what you expected. That's scary." Carlson uses specialized tools to measure the exact point at which the thermal envelope becomes less efficient, when the indoor heat begins to bleed through the wall, using this data to pinpoint where they may inch closer to a perfect seal.

The Thermal Envelope Company's engineering expertise, commitment to quality implementation, and unconditional guarantee combine to provide unprecedented value to homeowners. Simply put, Carlson shares, "Comfort is the core of this business. We deliver comfort, engineered!" ■