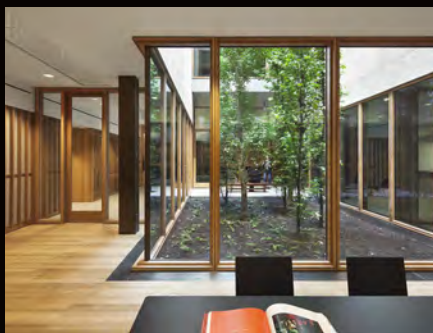
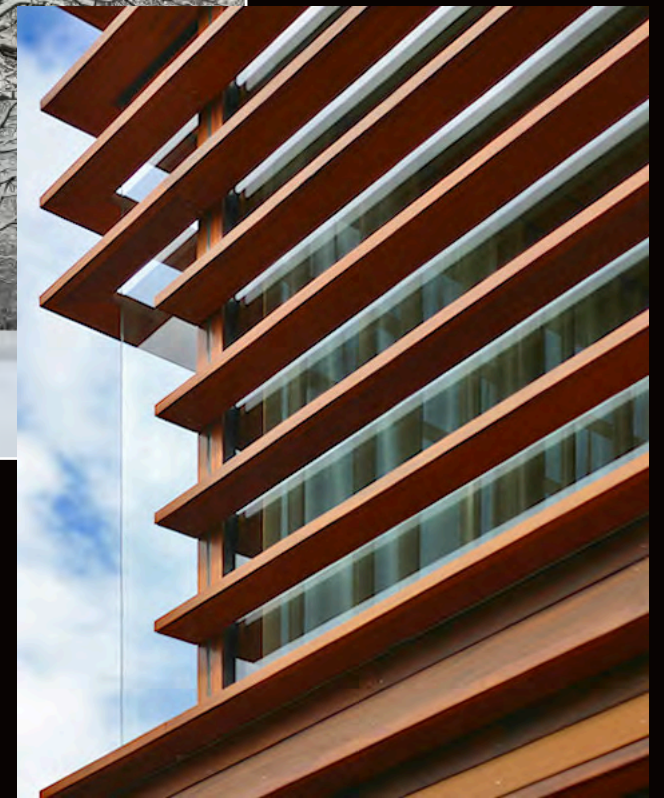


Why Wood? *Why Duratherm?*

“ *In all things of nature there is
something of the marvelous.* ”

– Aristotle

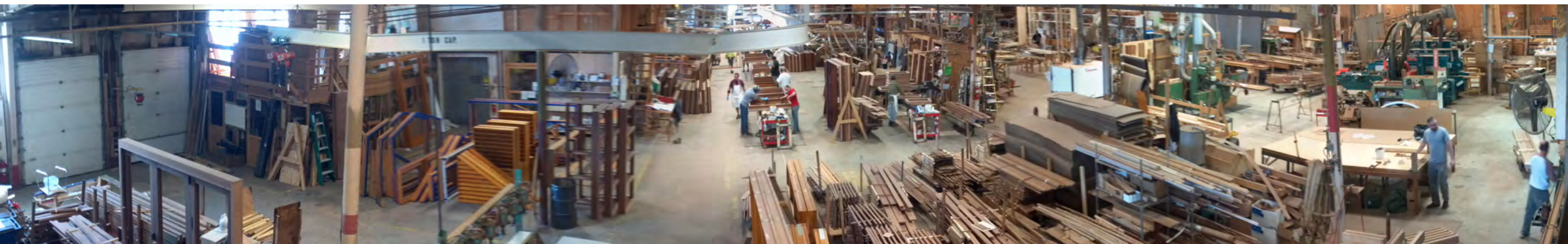


Mission Statement

Our mission is to be the world's best wood window and door manufacturing experience for our clients, our employees, and our community. Being the best means providing the highest-quality product in every case; it means providing service solutions without hesitation, and it means being committed to our clients' visions of architecture excellence and never resting until those visions are fully achieved. The Duratherm brand will be differentiated from all others by our customers' and our employees' complete satisfaction with our company.



... and the amazing story of wood.



Our Vassalboro facility:

Our spacious and environmentally friendly production floor is manned by the best craftspeople in Maine. Most of our employees have been with Duratherm for many years, and this offers our clients a strong base of experience and knowledge that will always deliver the finest custom hardwood windows and doors in the world. Our advanced computer systems bring a precision and efficiency to our work that means on-time delivery and quality budget management every time.

Photo by Derek Downing

Over the past six decades, we have learned some really important things about windows, wood, architects, and the people who live and work in the buildings and homes that our windows illuminate.



First, we know that wood is the best material for windows. Second, we know that the world's best architects also know this simple fact. And third, we know that while people who look out of those beautiful custom-made wood windows love the feeling they get, many have no idea why wood is perfect in so many settings and climates.

This book is our answer to that often-asked question, "Why wood?"

We also hope that as you read and enjoy this presentation, the answer to the question "Why Duratherm?" becomes equally obvious.

Timothy P. Downing, President



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In the dead of winter the temperatures dropped to minus 20 degrees, and the icy, crusting snow was blasted onto the old tree's bark with gale-force winds that ripped through the forest like a scythe.

But the old tree stood, taking it all like it was just another day.

Thrusting almost 200 feet high into the near-arctic sky of Maine in December, the oak barely moved, its strong branches and trunk reaching into the forceful winds as though enjoying it all, feeling the air around. Deep underneath, its roots gripped the frozen soil like a vast anchoring system that nothing could move.

* * * * *

The history of wood is a rich, rich story. It is a story about life itself. The trees of our planet give us a habitable world. Without them we would never have existed. Without them there would be nothing. The wood of trees tells the story of humanity: our shelter, our furnishings, the raw material of life. Our first tools were made of wood. The first explorers' ships were wooden. The very paper on which the histories of our civilization are written came from wood.

The power of wood cannot be overstated.

And for good reason. It is renewable. It is sustainable. It is beautiful to our eyes. It is strong. It is versatile. It can be crafted into innumerable and infinitely useful things. It feels good when we touch it. It smells good. A musical instrument crafted from wood has the richest tones, the greatest range. There is nothing like wood.



Monticello Visitor Center and Smith History Center

Ayers Saint Gross

Charlottesville

Being in the right place at the right time can mean everything. We were in the offices of Ayers Saint Gross architects for another project when we were asked to stop by the office of Adam Gross for a look at a new

project. It turned out to be the new visitor center at Monticello, the famous home of Thomas Jefferson in Charlottesville, Virginia. The Constitution he wrote is a living document that protects our nation. The newly designed visitor center is a living structure protecting Jefferson's beloved home. Our sustainability policies, our commitment to the durability and beauty of custom hardwood windows and doors, and our ability to craft furniture-quality windows created a signature opportunity for our company. Our success with Ayers Saint Gross architects, and the relationship that has developed, continue to grow with new projects preserving our nation's history.

The Monticello Visitor Center is the recipient of both LEED and architecture awards.



Photos by Alan Karchmer

Our Sustainability Policy

To continuously identify, prioritize, implement, and monitor all opportunities to improve our operational efficiencies (energy and environmental) in order to reduce our carbon footprint and to strengthen our role as a concerned, environmentally friendly corporate citizen of our community.

Wood, within reason (and among reasonable people), is an inexhaustible resource that renews itself and would prolifically cover most of the earth if we let it. As a species, wood is fertile and virile. It grows quickly and is highly useful and functional throughout every stage: young wood is pliable, mature wood is strong, and old wood is the most beautiful of all. It comes in an almost infinite variety of colors, grains, and sizes. It is easy to work with: all you need is a sharp saw and some other easily acquired tools – plus some hard-to-acquire craftsmanship – and you can really build just about anything. In the hands of a true craftsman, wood becomes a work of art. Everyone loves wood. What other construction material can say that? Imagine. Everyone loves wood.

Truer words were never spoken. The richness of wood gives our homes' interiors a feeling of comfort and joy. The durability of wood, with proper maintenance, makes our exteriors all but invulnerable to the elements. The warm feel of wood furniture has been a family tradition since the beginning of time. Banisters, staircases, floors, beams, chairs, cabinets, desks ... wood is everywhere in, around, and throughout our lives. No one ever gets tired of it. Even today in architectural magazines those powerful pictures of woodcraft still make the readers slow down and relish every curve, every texture. The way light and wood interact is the ultimate blending of nature's power and beauty. Wood, blended with other materials, makes them more beautiful and useful. Wood and plastic. Wood and metal. Wood and glass. Wood and concrete. Wood enhances everything. But no matter what you do, nothing makes wood more intrinsically beautiful because, in and of itself, it is perfection unveiled. It's hard to improve on perfection. But with the proper craftsmanship the very best of wood's nature and beauty can be revealed.



Shown here (top to bottom): teak, mahogany, and red oak. We also stock ash, cherry, cypress, douglas fir, maple, white oak, sapele mahogany, and spanish cedar, among other species.

Baker House, MIT

Alvar Aalto / Perry Dean Rogers

Cambridge

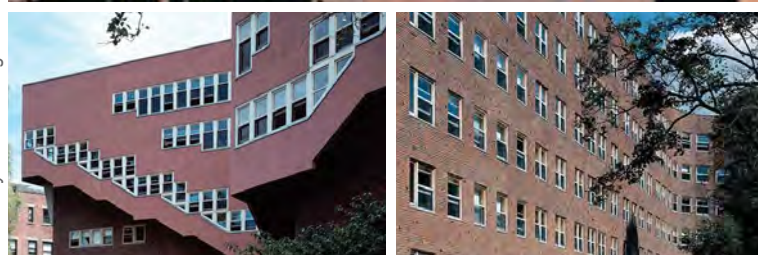
When the original architect is a national and international icon, it's clear that the renovation, decades later, has to be absolutely perfect.

The original design for MIT's Baker House was created by world-famous architect Alvar Aalto of Helsinki between 1946 and 1949. The goal was to begin fulfilling the school's vision of becoming a residential university with "an atmosphere of order, peace, and beauty." That vision, coupled with Aalto's monumental style, created a landmark building along Boston's famous Charles River that is a signature structure for the city.

Perry Dean Rogers of Boston was chosen as architect for the restoration.



Photos by Jeff Goldberg / Esto



Wood's Durability

The power of wood's durability cannot be overstated. It is renewable. It is sustainable. It is strong in every climate and condition. It is versatile. There is nothing like wood. Our craftsmanship lifts the durability of wood to new heights of beauty and utility.

As one looks across the Charles, the building's silhouette shines in the dawn or dusk. Its hundreds of hardwood, custom-crafted windows bring the building to life as nothing else can. Originally, the pine windows were painted a light gray and required frequent maintenance. Then those windows were all replaced with aluminum in the 1970s. But the cold visual impression of metal could not erase the memory of the original architect's warm use of rich, vibrant wood. The restoration design team was determined to restore what had made the building so striking. "Aalto believed that it was the beautiful aging and patina of the natural materials that give life and depth to a building." This simple, elegant concept was the guiding principle that brought Perry Dean Rogers to Vassalboro, Maine, and to the Duratherm Window Corporation. Through the competitive bidding process, which included other wood window companies and also some aluminum window companies, the architects realized the Duratherm windows were "infinitely superior." Duratherm's windows replicated the slender profile of the Aalto design and, over time, the MIT team discovered that Duratherm's weathered teak aged to a lovely light gray patina, nearly identical to the original.

The project manager had inspected the 800 other Duratherm teak and mahogany windows installed over 25 years earlier throughout the campus. Out of those 800, only one window had a problem. The problem was that it had been installed incorrectly; otherwise the record of durability would have been perfect. "The rest of the 799 windows," she said, "were as solid as the day they went in." Ocean salt and harsh weather systems wreak havoc on aluminum. Comparing the initial costs to the lifetime savings, there was absolutely no doubt that the Duratherm way was the right way.

The design challenge of varying the trim widths to accommodate the wide range of jamb conditions in the undulating wall facing the Charles was met by Duratherm manufacturing excellence and on-site responsiveness. "From the very beginning of the process, Duratherm understood exactly what was needed."

As the air warmed, the old tree began to reveal its secrets. The cold of winter had driven, deep inside, the powers of survival, and now as the first tendrils of the coming spring touched the tree's bark and began to seep through the winter's armor, the stored energy of a winter's rest and the will of two hundred years of life, all built up like a coiled spring ready to release. From deep in the farthest reaches, the roots' stirring caused a tremor of intent that reached throughout the barren tree's branches, out to the little dormant buds, now just gray bumps, still cold and stiff. Like a sleeping giant, the great oak, hundreds of feet high and wider than three men could reach around, began to awaken. Small hints of green began to form beneath the ground's warming surface. Outwardly, the old tree looked exactly the same, but inside things were forming and shaping that would prove once again that it was as alive and vibrant as a spring sapling but in another, even more extravagantly beautiful way.

* * * * *

How can our world move to a more sensible position of sustainability and renewability putting aside the current rapacious environmental attack on nature and on our precious global environment? How do we educate our world about the fragile nature of the amazing environment that supports us all? What can we do to fight off the effects of greenhouse gases and carbon dioxide? How can we work together to stop the extinction of over 25,000 species of animals and plants every year? What about soil erosion, clean air, and clean water? What chances do the beauty and the elegance of nature have against the forces of development and high finance in our world today? The answers – and there are many – all involve growing more trees, finding substitutes for fossil fuels and for materials like steel, concrete, and plastic, and reintroducing paper (wood) products for construction, packaging, printing, and sanitation. Wood is part of every answer.



Barnes Foundation Museum

Tod Williams Billie Tsien Architects of New York

Philadelphia

For several years, plans moved forward to relocate the private collection from the Philadelphia suburb to Philadelphia's museum district. The design and construction of a new building was essential. The new galleries were to include an abundance of natural lighting while still providing critical solar protection, state-of-the-art security, high-energy performance, and the clean aesthetic demanded by the architect's vision. For Tod Williams Billie Tsien Architects, the selection of a window manufacturer that could accommodate all of these sometimes-conflicting requirements was simple: they called upon the experts at Duratherm Window Corporation.



Photo by Michael Moran

Duratherm's history of collaboration with elite architects and clients from around the world, and of creating unique and distinctive fenestration solutions, made the choice an easy one. It was no surprise that Duratherm was called upon to play a powerful role in the rebirth of the Barnes Collection in its new location.

Conservation and protection are overriding concerns in museum design and construction. In the case of the Barnes Collection, the 800 precious paintings had to be protected from the ravages of – and yet still viewed in – the rich sunlight. The unique collection occupies 24 galleries, all collected and arranged by Dr. Barnes.

As Duratherm Vice President and Barnes Museum Project Manager Keith Birden noted,

“Because we were contacted in the early stages, we were able to research and meet the paramount requirements of the forced-entry specification while still satisfying the aesthetic, curatorial, and energy performance criteria. Our research included developing concealed stainless steel glass capture detailing that ties back to the building structure, making the windows virtually impenetrable. The effectiveness of this detailing was affirmed in the course of rigorous forced-entry testing of a full-size gallery mock-up window by an independent testing agency.”
(continued)

Our Commitment to True Service

Our record of meeting the demanding specifications of the world's premier architects, homeowners, and contractors is second to none. But we take nothing for granted. Every order, every window and door, and every client relationship receives the full weight and measure of our tradition and the all-out effort of every member of our staff and every employee of our company.

It may seem impossible that choices made by architects and contractors in construction designs and techniques could play a significant role in the world's environmental agenda, but they do. Climate change, biodiversity, and forests are the three top issues. But undeniably, the health of forests plays a large role in the other two. The forests are humanity's first line of defense in the fight for planet-wide livability. How we each join this fight will determine the outcome. So, yes, the choices made by architects and contractors, and the choices made by all of us, are important in the battle, both for the direct effect of reducing the waste and destruction and for the example they set for others.

Renewable wood offers an answer to many of humanity's environmental challenges. This answer does not involve compromise of utility, of beauty, of versatility, of durability, or of anything else. In fact, in almost every case where wood is appropriate, the choice of wood enhances, improves, and enriches all aspects of the project.

In the design, production, finishing, and installation of modern architectural windows, wood also offers an intelligent and elegant solution to the modern challenges of sound and sustainable construction practices.

* * * * *

As the green buds burst through the tough bark and reached toward their destination of sun and sky, a deep sense of rebirth rippled through the old tree. Almost like a languishing stretch after deep, peaceful rest, the ancient oak's entire being began to shift gears. Its branches awoke and sent forth little fingers of green everywhere. Its roots pushed deeper down and farther out. Its prodigious girth grew, infinitesimally to our view, but vastly increasing its power from within. This stirring of such an enormous life began to have its effect everywhere around, almost like a magic wand waving unseen



Solid Hardwood Components

We do not use finger joints. Large, monumental systems have stress factors of weight and weather that really bear down. This is true of all systems, large and small, over time. So we use only hardwood. It's better and more beautiful too.

Photos by Michael Moran



Located on Benjamin Franklin Parkway in the museum district between the Rodin Museum and the Philadelphia Museum of Art, the Barnes Museum stands to become a key destination for art lovers from all over the world.

Barnes Foundation Museum *(continued)*

Tod Williams Billie Tsien Architects of New York

Each oversized glass panel was extremely heavy, so precise hanging was critical. Both Tod Williams Billie Tsien Architects and the Barnes Collection needed an expert manufacturer with extensive experience in handling wood-framed glass windows. To this end, Duratherm developed a removable clasp at the head of the units (some weighing well over a ton) to facilitate movement and placement on-site by crane.

Tod Williams Billie Tsien Architects' design for the Barnes has received rave reviews from a variety of sources, among them *The Economist*, *Vanity Fair*, *Architectural Record*, and *The New York Times*. The natural interior lighting receives particular note, since it brought out the depth of color and texture of the priceless collection of paintings that had been masked by the dark interiors of the previous facility.

Duratherm is very proud of the role it has played in this latest success. Timothy P. Downing, president of Duratherm, stated, "Working with the Barnes Foundation and with Tod Williams Billie Tsien Architects was a privilege. Every employee here at Duratherm was personally engaged and committed

to the success of this project. It was a large, complex project that drew on all of our resources. The wonderful results of this successful collaboration are now obvious to all."

"Trust is always a vital factor in all of our projects," continued Mr. Downing. "The Barnes Collection entrusted us with their priceless holdings – to design and manufacture windows that would preserve and illuminate them today and into the future. We are honored to have played such an important role."

Now that the doors to the new museum have opened, this collection, for the first time, is readily accessible to all visitors.

instructions to the hidden elements of the forest and calling forth the innumerable players in a drama of existence. The little animals began to forage at its base. The insects began their irresistible march of instinct and industry. The birds landed in the branches and began their spring rituals. All around the forest was coming alive in the vast shadow of the oak. Another winter behind, a bright new spring ahead, the tall tree stood invincible and strong. It was a little colder this spring, and the hard winter had taken its toll. But in the midst of the vast forest, far from the rumblings of man, everything was as it should be. All was right in the world.

* * * * *

In the dark days of manufacturing when shortsighted management aimed at always increasing production whatever the cost, when there was no documentation or accountability, and when quality control meant only increasing profit, the great production machine of civilization nearly destroyed everything. Ironically, it was either the reckless pursuit of wood or the senseless stripping of woodlands for building or farming that caused much of the environmental damage over the years. Today, it's waste disposal and hazardous materials that have come to the forefront of the environmental battles. But wood, as in all things, started everything.

A forest, in and of itself, like the wood we love, is an environmental wonder of the first magnitude. Because trees grow much larger than other plants, they form a natural shelter and habitat for their smaller plant cousins. These micro-environments are far more valuable and precious than they first appear to be. The variations of sunlight penetration, temperature, moisture, and wind effects within these micro-environments create sub-habitats for endless species that



Burgin Center for the Arts

Ennead Architects

Mercersburg

Pennsylvania | There are designs that come along that take every ounce of craftsmanship to bring them to full-blown fruition. The Burgin Center for the Arts features a beautiful 150 x 125 x 18-foot-high window wall that wraps around the entire building. This defining feature creates the visual impression of a delicate



structure suspended by thin supports surrounding a sculpture-like interior. But the truth is that the sophisticated design is supported by a super-strong web of steel lateral wind bracing at the vertical mullions. The combinations of clear and fritted glass give the building a “living” feeling as the light of the day traces its path across the facade. The precision placements and the crafting of this window wall are the secrets to its success. The appearance of grace and fragility is generated by the true nature of the window wall: strength, stability, and solid construction. The result of our collaboration with Ennead Architects of New York City created a building for the teaching of the performing and visual arts that is constructed of all-natural materials, that blends into its environment, and “blurs the distinction” between the indoor and outdoor spaces. At night the Center becomes an irresistible invitation to the arts. The winner of awards and honors in architecture, this project has been featured in *The Wall Street Journal* and *Metropolis Magazine*.

Photos by Jeff Goldberg / Esto



For Duratherm, meeting the challenge of the elite architecture specifications and of the practical functionality of a performing arts center was exactly what we love to do. The results speak for themselves.



Our Sustainability Policy

To continuously identify, prioritize, implement, and monitor all opportunities to improve our operational efficiencies (energy and environmental) in order to reduce our carbon footprint and to strengthen our role as a concerned, environmentally friendly corporate citizen of our community.

would otherwise have no home. Biodiversity is inherent in forest ecology. It is a natural by-product but also a vital component of the health of the forest and of our planet. Biomass accumulation in vast amounts is one of the things forests do really well. Compaction and continuous accumulation are keys to in energy availability. Trees store great amounts of water and become major regulators of groundwater, evaporation, and local precipitation (snow and rainfall). Eighty percent of the world's biodiversity is found in forests, mostly because of the water.

A single tree can absorb 48 pounds of carbon dioxide a year and release enough oxygen (about 260 pounds) to support two human beings.

The carbon footprint of wood is much smaller than that of aluminum, steel, plastic, and concrete. This is mostly because the production of wood products is usually far less energy-intensive. Trees and forests actually filter the soil (phytoremediation) by absorbing the pollutants directly or by changing them, like magic, into either more beneficial elements or by eliminating the harmful effects. Trees control noise like nothing else. Standing in a forest, poets over the ages have spoken of the peacefulness and quiet. Trees reduce runoff and save erosion, they clean the air, they give us shade and cooling protection from the sun's rays and heat. Having a home surrounded by shady trees increases its value.

Imagine your home or building designed with beautiful teak, mahogany, or oak hardwood windows. Feel the karma of the forest, the beauty unrivaled, and the sense of peace and tranquility of construction in harmony with nature's most basic building material. Then imagine replacing all of that with aluminum, steel, plastic,



Dickinson School of Law

Ennead Architects

Carlisle

Pennsylvania | The challenge of world-class architecture is to make it look effortless and natural through its striking elements of design. The setting for the Dickinson School of Law is in an agrarian valley in University Park, Pennsylvania, surrounded by mountains. The building, designed by Ennead Architects (New York City), is the center of legal education experience at the world-famous university.

For Duratherm, we were faced with the challenge of an elliptical courtyard abutting the building and a requirement for very large doors that open as if they were part of the window wall, over two stories high. The teak exterior wood and the construction techniques bring light from the outside deep into the central interior of the building. On the inside, Anigre wood species was selected to match the interior classroom furniture. This is one of many projects we have completed with Ennead. The Dickinson School of Law building won the "Project of the Year Award," mid-Atlantic, in 2009 as well as honors from AIA Pittsburgh and AIA Central Pennsylvania, and was the Special Recognition winner of the Marvin M. Black Excellence in Partnering Award, among others. This was an extremely challenging project with an award-winning result.



Photos by Jeff Goldberg / Esto

Durability

In the hostile environments of oceanfront, mountain, and desert locations, wood is without rival in its durability and resistance to the elements. The thermal expansion of wood is among the lowest of all materials used in window production and manufacture. Windows as part of the design remain firm and stable when other materials fail and shift.

or concrete. If the difficult upkeep, short life cycle, and cold, bare appearance of these imitations of true wood windows don't make you turn back to nature, then just think of the cost over the lifetime of non-wood windows. Recently, a customer from 30 years ago came to us again for the same project. If you're thinking that our windows were finally wearing out and the customer needed replacements, think again. He was building a large addition, and he wanted the same windows he had purchased three decades ago. "Those windows are as good as the day they were installed. They are still looking good and are 100 percent functional. I want more just like them!" Have you seen steel, plastic, and aluminum windows after 30 years?

Enough said.

* * * * *

Now in the arms of summer the old oak could feel its heart pumping life throughout its giant body. Limbs reaching nearly 200 feet into the air. Roots spreading 200 feet and more in all directions. Water being absorbed, oxygen being exhaled, green explosions bursting all over its tough, dark skin. The tree was reveling in being. The warm sun, the cool soil, the moisture, the soft breezes ... here in Maine's richest forest, deep in the world of nature, being ... just being. The tree could feel its strength growing, its power coiling up, its evolutionary purposes in full force. It was alive with a capital "A." Alive in every way, throughout every inch of its being, and every plant and animal in the vicinity could feel the giant's presence. In the forest, surrounded by its own environment, enriching and enriched ... at home.

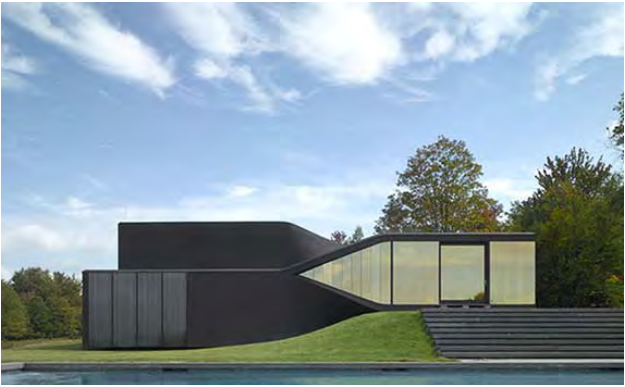


Upstate New York

This amazing and unique architectural home was designed by UNStudio Architects of Amsterdam in 2007. What starts out as a rectangular box on one elevation morphs into two separate, diagonally opposed volumes on the opposite elevations, creating a flowing, split-level internal organization.



Photos by Christian Richters



The extremely large windows integrated into the angled design created a haunting and inspiring presentation, and a very challenging window assignment for Duratherm. Unfortunately, this prize of architecture and one of Duratherm's favorite projects caught fire and burned to the ground just one year after occupancy. Obviously, the owners were shocked and saddened. But also, Duratherm employees and designers who worked on this project were crestfallen. For us, no project is just a project: each one is a deep involvement and a work of commitment and dedication. There are plans to rebuild; the loss for us was personal as well as professional. At Duratherm it is our company's culture to care deeply about the work we do and about our customers first and foremost.

Rigorous Testing

Duratherm's commitment to rigorous testing reflects our "customer first" philosophy. Our product-testing protocols are designed to meet the most stringent and thorough specifications in the industry. Duratherm windows have been tested to withstand an airborne debris assault equal to a fierce hurricane. Our windows are beautiful and, when required, very, very tough and secure.

Is it any wonder that wood wears well? If maintained (and it's pretty easy), it will last virtually forever. Wood is extremely strong for its weight, and it has roughly the same tensile and compression strength as steel. This means it is really tough whether being pushed or pulled. It has "oriented strength," which means if the windows are well-designed, the wood will be even stronger. Ours are well-designed; you can count on that. Wood takes a fine finish: the finest finish, in fact. It is repairable in almost every way. Wood can be restored if damaged. Wood is warm to the human touch. It feels good. Each wood-crafted piece is unique. Imagine that. Every window in your home is an original, not a cookie-cutter copy. It is a far better insulator than steel, aluminum, plastic, or concrete. Wood has a strong biostatic property, making it safer and resistant to contamination.

Even some of the negative aspects of wood are good. It's flammable, but not excessively so. As often reported in the press, one sees buildings made of steel and wood after a fire, and the heavy steel now melted and twisted is still being held up by the charred remains of the structural wood ... including window frames. Wood cannot be cast, molded, or extruded. Wood is obstinate. It remains wood no matter what happens. It cannot be welded. It must be connected *with fasteners and/or glue*. Today's glues are stronger than the wood. *[See our site for a complete exposition of the glories of great glue and modern glue techniques.]* Sawdust can be an irritant, except at Duratherm, where safety always comes first and we capture and re-form our sawdust into Durabriques, which are very popular in Vassalboro and surrounding communities as a clean substitute for firewood and coal. (Plus Durabriques are made of only hardwood – oak, mahogany, and teak – so they burn for hours, increasing energy efficiency.) And finally, wood shrinks and swells with changes in humidity. We call it breathing. This feature is easily and intelligently

Pictured below is traditional firewood burning beautifully in a fireplace. The inset photo shows our popular Durabriques doing the same thing but with greater efficiency and sustainability.



Photo by John Gaudet



The Duratherm Difference

*Made from the world's ultimate woods and materials,
by the world's finest craftsmen,
for the world's best customers.*

Every once in a while a company comes along that defines its category.

When it comes to high-quality hardwood windows and doors that are customizable and that enhance and enable architects' designs, Duratherm Window Corporation defines that category, and everyone knows it. But as a company, we understand the competition is hard on our heels and that in each year and on every project we have to be better and better. There's no resting on one's laurels in the window business. Our customers may

happily gaze out of our windows in wonder, but all we can think about is how to make windows that meet our customers' demanding specifications more fully, more beautifully, and more affordably.

We know that Duratherm windows and doors are not for everyone, but we wish they were. One of our long-term key employees said recently, "If architects and contractors knew what I know about Duratherm, they would never go anywhere else." That idea, of helping you know what we know, is the purpose to which this brochure is dedicated.



Security

Museums, institutions, residences, and almost every project today have security elements with specifications that must be met. Our windows have met these standards and exceeded them. The strength of our glass and wood will surprise you. Be sure to ask about security.

managed in grain selection and orientation, and with the marvelous, high-tech finishes we use. Wood is often abused and misused, unfortunately. Construction pallets are a rude example. Perfectly good wood used to make cardboard boxes is another. These are generally disposable, one-time uses. Wood likes to be used over and over. Perfectly good wood used for heating and cooking is another abuse. Entire forests have been decimated for heating fuel. Solar cookers are now helping abate this waste. "Particle board," because of its construction, is much heavier than real wood and wastes vast amounts of energy in shipping. It is also often full of formaldehyde or other toxins and can be dangerous. Worst of all, it lasts only a few years and then has to be replaced. It is almost impossible to repair. Furniture made of real wood can and does last hundreds of years, increasing in value as time goes by. An authentic Ben Franklin desk from the revolutionary period can be valued at hundreds of thousands of dollars. What particle board desk can say that? Providing each person with seven or eight complete sets of furniture over a lifetime is not – shall we say – a sustainable scenario.

Wood is completely recyclable, and the rising popularity of hemp and other natural substances may well do more to cut down on the waste of precious wood in the future. A forest populated with a wide variety of trees, young and old, is a veritable environmental sustainability juggernaut marching through time, saving the planet, saving humanity, replenishing everything it touches. We should always consider wood as the most cost-efficient, energy-efficient alternative. And we all would if we all knew the facts.

This publication is dedicated to spreading, and championing, that knowledge and understanding.



Why Wood?

The appeal of nature's finest building material cannot be overstated.

Seeing and touching wood automatically generate a visceral feeling of well-being and comfort. It's as though it's in our DNA to just love it. We love seeing it. We love touching it. We love everything about it. Its texture. The way it reflects light. The way it looks. The way it smells. Everything.

Instinctively we know that anything made of wood is just better. And when it comes to construction materials, wood makes everything warmer or cooler, prettier, and more satisfying to be around.

Why? All the reasons in this publication explain it ... almost. Because in the end, there is something about wood – and how people love it – that can't really be explained. It just is. It's just one of those things in life that is so obvious to us all that no explanation is needed.



Photo by Hennessey Productions / ARQ Architects

In the design and construction of windows and doors, wood really has no rivals. The up-front initial costs are equivalent to other materials, but the lifetime costs of those other materials – including maintenance and replacements – leave absolutely no doubt. Wood is good. Wood is great. Wood is an amazing value. It is recyclable, renewable, abundant, resilient, versatile, and it comes in almost any texture and color anyone can imagine. Wood is a wondrous, beautiful material.

In the hands of great architects wood becomes miraculous.

Why wood? Because it's perfect.



Inset: A beautifully handcrafted double helix spiral stair manufactured by York Spiral Stair, a division of Duratherm Window Corporation. Photo courtesy of Wright-Ryan Construction

Precision Joinery

Elegant architectural design requires precision. Really tight joints can make all the difference in both the short and long runs. While our tight joint system is harder to do and more time-consuming than the common "V-groove," it renders a result beyond all others and beyond all doubt.

Our Team

*A unique combination of Yankee ingenuity
and dedicated world-class craftsmanship.*

Vassalboro, Maine

When all is said and done, when all the beauty of wood is appreciated and the architect's transformational designs are in place, it comes down to the people whose boots are on the production floor and on the installation site.

Our people are all from Maine. They live here, they work here, their lives are right here in Vassalboro, Waterville, Augusta, and Hallowell, to name a few. To them, Duratherm is not just a job; it's a way of life. To them, our customers are like family: given only the best.

Our team has craftsmen and draftsmen; it has LEED specialists and saw specialists. Our team has people who know everything about glue, and people who are experts on CAD/CAM and all aspects of estimating.

Collectively, we have thousands of years of experience in all facets of custom hardwood window design and manufacturing. Most of it has been earned right here. The secret of Duratherm: we really know our company, our process, our materials, and our customers.

Hopefully, that is obvious now. But we want to prove it.
To you.



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The old tree could feel it. Winter coming. The glorious effulgence of its autumn leaves was like a large flag of many colors waving a message to the new season of the tree's invulnerability and omnipotence. A celebration of the coming cold. Deep beneath this aerial display, the roots were searching for a deeper purchase, a stronger grip on the colding earth. Winters could be unforgiving to the unprepared. The rich dark bark seemed to tighten and thicken, hugging the tree with a living armor.

The changes coming were no mystery to the animals and plants around the grand old tree. Each in its own way was getting ready for a long period of quiescence and consequence. Winters are vital in the cycle of life in the forest. The rich cover of leaves and branches, the lingering snow pack, the icy air ... all essential to the forest's springtime rebirth of new growth and new life.

The old tree could feel it. The birds were leaving. The highest branches could feel it as they waved, not goodbye, but in acknowledgment of the grand, endless cycle.

The old tree would be ready. Again.

Duratherm Window Corporation

Architectural windows and doors since 1967.

*Made from the world's ultimate woods and materials,
by the world's finest craftsmen,
for the world's best customers.*

In addition to building the finest custom hardwood windows in the world, we also raise a small herd of organic, grass-fed Highland cattle on our 16-acre perimeter farmland adjacent to our manufacturing facility.

We think that our small herd of these amazing animals, along with our lively, egg-laying chickens, says something important about our company. Like lofty eagles, we have glorious wings that travel the world, but we also have our feet firmly planted on the rich ground here in Maine. Even in the amazing and intricate window walls of contemporary architecture, for us, the hands-on perfection of each window we make will always be a natural result of Maine's enduring craftsman culture.

Duratherm is a sustainability company and a natural product of Maine's fresh air, big skies, forests, open spaces ... just like Penny.



Penny



Vassalboro, Maine, borders the towns of China to the east, Augusta to the south, Winslow to the north, and across the Kennebec River, Sidney to the west. At last count, the town had a population of 4,340. That includes the villages of South Vassalboro, North Vassalboro, and East Vassalboro. The town was named for William Vassal, an original patentee of the Massachusetts Bay Colony and a graduate of Harvard College. The Revolutionary War caused the loyalist Vassal to flee to England and sell his American holdings. Alexander Graham Bell lived in East Vassalboro's Paul Revere House.

Above is an actual photo of a Vassalboro tree enjoying one of our robust winters. It may seem a desolate and cold photo, but to us, it symbolizes determination, courage, strength, durability, fortitude, evolution, and, well, home.

Vassalboro may seem like "the middle of nowhere" on a map, but when it comes to the finest custom hardwood windows to make your architectural vision hold true to your creative designs, **Vassalboro is actually the center of the universe.**

Call us at 800-996-5558, or better yet, visit us at 720 Main Street and experience the Duratherm difference for yourself!

The features of wood in architectural design and construction:

Low embodied energy: This is the total amount of energy required to manufacture a product. According to AIA's Environmental Resource Guide, wood requires 3,770 British thermal units (BTU) per pound (BTU/lb), recycled aluminum needs 20,700 BTU/lb, vinyl consumes 36,500 BTU/lb, and aluminum uses 103,500 BTU/lb to convert from raw bauxite. Wood windows (and doors) are produced with a much lower amount of embodied energy.

Recyclability: Wood windows are manufactured all or in large part with recycled materials, and can also be recycled themselves after use. This reduces landfill use and depletion of nonrenewable resources, and saves money in a dedicated, sustainable production process.

Renewable resource: Unlike steel, aluminum, or cement, many species of wood carry the Forest Stewardship Council's certification.

Local and regional connection: As an American manufacturing company for many projects, our shipping expenses are much less because of proximity. Most of our production materials are purchased locally, plus our employees and service vendors are all part of the local Maine (and US) economy.

Energy efficiency and performance: The manufacturing of wood windows versus aluminum, steel, or even vinyl uses from 10 to 100 times less energy and does not produce chemical waste that is part of aluminum and PVC processing. Wood offers excellent insulation (400 times higher value than steel) and is very condensation-resistant, and because of its "breathing" nature, it helps to control humidity indoors. It does not attract dust because of its lack of electrostatic charge. Wood is a sound-absorbing substance and barrier as well, giving your home or building a feeling of quiet and intimacy. Today's modern wood windows, with Low-E glazing, warm-edge technology, and inert gas between the panes, offer homeowners maximum energy efficiency.

Low environmental impact: Natural hardwood windows do not harm the environment, air, or water. Far from damaging the earth, wood windows come from the earth and are as natural as you can get. Wood is a renewable resource, when managed intelligently, and an integral part of the ecosystem. Forests produce and maintain the health of the planet and are the most natural, nonhazardous building material known to man. Wood windows offer architects the lowest environmental impact material and the most beautiful one too.

Durability: In the hostile environments of oceanfront, mountain, and desert locations, wood is without rivals in its durability and resistance to the elements. The thermal expansion of wood is among the lowest of all materials used in window production and manufacture. Windows, as part of design, remain firm and stable when other materials fail and shift.

Minimal waste: If there is any at all, waste occurs in the production phase. At Duratherm Windows, even our sawdust is recycled into Durabriques, a locally sold fireplace material that burns completely and cleanly. People around our plant use this terrific, new heating resource at \$200/ton, with free delivery for seniors. Our supply of Durabriques is always in great demand as soon as it is available.

Positive social impact: The natural essence of wood meets every definition of the word "ecological" and is highly suitable for people with health concerns.

Sustainability/Sustainable design: Most of our clients (architects, contractors, and owners) have goals to achieve sustainability through sustainable design and production. The elimination of negative environmental impacts through the intelligent and skillful design techniques of today's architecture and

construction methods is very important to Duratherm. Protection of the environment and, importantly, the connecting of people with their natural environment through architecture, is the goal of Duratherm's sustainability initiatives. Our commitment is strengthened through our "champion" status as a member of Maine Businesses for Sustainability, our participation in the Maine Wood Products Association, and our ongoing effort to increase the sustainable efficiency of every element of our Vassalboro operations.

First investment: The initial installation of wood windows can be somewhat more expensive (depending on how you look at it) than other nonrenewable material windows like plastic or aluminum. But the initial investment is more than justified in the durability of wood, which lasts two or three times as long as other materials.

Life cycle costs: Maintenance and repair are the largest determiners of lifetime costs. Since wood outlasts other materials by factors of two or even three (especially in extreme weather environments), a rule of thumb would be to calculate what the initial costs of aluminum and plastic installations are and then MULTIPLY THAT BY TWO OR THREE, since they will have to be replaced at least once, probably twice, and maybe three times, before wood even starts to show any signs of wear. Once this calculation is made properly, wood always wins.

Versatility: Wood can be painted and stained in an infinite variety of colors and finishes to get exactly what is desired. Arches, sweeping curves, circular openings, all with complete customization, are standard features of wood windows. The strength of wood (in proportion to its size and weight) is unmatched. Wood

obviously is also much easier to shape and cut than almost any other material.

Aesthetics/Appearance: Wood windows and doors can look both traditional and modern, but they always convey a dramatic feeling of unmistakable quality.

Maintenance: Since they are free from corrosion and rust and incredibly resistant to hostile weather conditions, wood windows are simple and easy to maintain by merely washing, or easily sanding and refurbishing to their original beauty. Once the wood has been treated properly, the authentic look of the windows will last for decades.

Architects: The wide array of colors, shapes, and sizes in an infinite variety of wood species gives architects the perfect design material. The timelessness of wood lends a sense of permanence and enduring beauty to architects' designs. The detail flexibility and customization of wood are ideal for architectural plans and designs, including frame profiles and dimensions. The size of wood windows is only restricted by the size-of-glass limitations.

Security: The structural strength of solid hardwood window construction increases home and building security.





Visit our website to view our full project portfolio details and to review our full capabilities.



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