Case Study

Beazer Homes: Zero Energy Ready

PROJECT OVERVIEW

PROJECT:
ZERH Single-Family Homes

BUILDER:
Beazer Homes

LOCATION:
Nationwide

GOAL:
Achieve 1.5 ACH50 air leakage on several thousand single-family homes across multiple regions.

RESULTS:
Before AeroBarrier = 3-4 ACH50

After AeroBarrier = 1.5 ACH50

AeroBarrier is critical to Beazer Homes achieving ZERH certification reliably, consistently, and at production scale.

Production Homebuilder Achieves Zero Energy Ready Homes

Planning & Analysis Sets the Stage for Success

Beazer Homes is the first national builder to commit to achieving the US Department of Energy's Zero Energy Ready Home™ (ZERH) certification on every home they build and will achieve this by the end of 2025. They chose AeroBarrier as a critical solution to help them achieve the level of airtightness needed for the ZERH building envelope.

Building several thousand homes a year across 16 metropolitan areas to be ZERH certified is a very complex undertaking. Beazer Homes completed careful planning and analysis to determine how they could consistently achieve this level of performance. They considered every option and focused on what works well for a production builder – what is repeatable.

"We set the goal of reducing our homes' energy use by about half to achieve ZERH," said Jim Moore, SVP of Operations. This also reduces the amount of PV solar to be added in the future to achieve net zero energy. Since air leaks account for 25-40% of a home's heating and cooling energy use[1], Beazer had to solve air leakage to achieve ZERH and set the goal of consistently achieving a very low level of air leakage – at least 1.5 ACH50.

> *AeroBarrier gives us a scalable solution – it's going to fill all of those holes, cracks, and crevices. We need to achieve a minimum of 1.5 ACH50. That's going to be pretty hard with caulk guns and tapes and stuff like that.*
>
> ***Jim Moore** - SVP of Operations*
> Beazer Homes

1. Energy Star Air Sealing Fact Sheet, 2005, energystar.gov

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Case Study

Beazer Homes: Zero Energy Ready

> *Within the realm of what we do as a production builder, we couldn't get to 1.5 ACH50 and ZERH without AeroBarrier.*
>
> ***Austin Ervin** - Director of Purchasing*
> Beazer Homes Nashville

AeroBarrier was chosen as Beazer's air sealing solution for its proven ability to seal the building envelope to 1.5 ACH50 every time, verify that via a continuous blower door test, and repeat and scale that over thousands of single-family homes in different regions of the country.

AeroBarrier a Critical Part of Beazer's ZERH Solution

AeroBarrier has become a critical part of Beazer's success in achieving ZERH for their single-family homes. This partnership enables them as a production builder to consistently achieve an air tightness of 1.5 ACH50 on every single-family home. Aerobarrier offers the reliability, cost, and speed Beazer needs to get the job done every time. This achievement has involved a strong working relationship with Aeroseal Envelope, its local installers, and Beazer staff in multiple locations.

Aeroseal Envelope staff and local installers such as Music City Air Barrier in Nashville, TN, have used their expertise to help Beazer Homes improve their overall air sealing practices. They identified areas in their models which are prone to leakage, determined how this leakage can be avoided, and established how far below 1.5 ACH50 AeroBarrier needed to seal. This allows for incremental leaks caused by work done after AeroBarrier is applied, guaranteeing that the required final air leakage will be achieved. AeroBarrier's installers have become the go to trade responsible for meeting air sealing requirements.

AeroBarrier also generates cost-savings. Like many builders, Beazer was flash foaming the attic- side of the drywall ceilings to meet air sealing requirements. Since using AeroBarrier, it can now eliminate this process, saving approximately $1500 per house.

In addition to meeting ZERH requirements, air sealing also minimizes the chance for condensation to form inside the exterior wall. This improves the durability of the home, and eliminates the potential for mold growth. A tighter seal also means a quieter home, better indoor air quality, and less insect intrusion for homeowners.

While Beazer is already using AeroBarrier effectively and efficiently on a large scale, the two companies continue to learn how to achieve a final air leakage of 1.5 ACH50 more efficiently, simply, and at a lower cost. Beazer Homes is an example of how Zero Energy Ready Homes can be achieved profitably by a production builder, providing better quality homes to homebuyers across the country.

ZERO ENERGY READY HOME
U.S. DEPARTMENT OF ENERGY
PARTNER

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Case Study

From Distress to Progress: Aaron Pettigrew

PROJECT OVERVIEW

PROJECT:
Single Family Homes
National Production Homebuilder

BUILDER:
Beazer Homes

LOCATION:
Nationwide

GOAL:
Achieve 1.5 ACH50 air leakage on several thousand single family homes annually across multiple regions.

RESULTS:
Before AeroBarrier = 3-4 ACH50

After AeroBarrier = 1.5 ACH50

AeroBarrier is Beazer Homes' national solution for achieving their air leakage goals on the homes they build, due to its reliability, repeatability, scalability, and other benefits.

From Distress to Progress: Aaron Pettigrew's Health Journey with Aeroseal

Aaron Pettigrew's Health Journey with Aeroseal

In 2017, Aaron Pettigrew faced an array of health issues: gastrointestinal problems, migraines, joint swelling, and even brain atrophy. Seeking medical advice, Aaron was directed by a friend to explore Chronic Inflammatory Response Syndrome (CIRS), suspecting it might be the cause of his ailments. CIRS, a condition resulting from prolonged exposure to biotoxins like mold, triggers a persistent inflammatory response, leading to symptoms such as fatigue and headaches. After undergoing tests, Aaron was diagnosed with symptoms related to mold exposure at his workplace.

Initially skeptical, Aaron embarked on a major renovation of his home, focusing on improving the air quality to better manage his CIRS symptoms. His consultant, Laurie Rossi, recommended Aeroseal to seal the ducts, a process she described as essential for "sealing the lungs of his home." In June 2023, Aeroseal of Colorado dramatically improved Aaron's indoor air quality by sealing the ducts, reducing leakage by over 85% and significantly decreasing contaminants from both supply and return airflows.

"The difference was immediate," Aaron recalls. "After the Aeroseal treatment, my home transformed into a safe haven, free from the pollutants that aggravated my condition. It's not just a house; it's where I can heal."

Since the intervention, Aaron's resilience to mold exposure has improved, and he can travel with fewer health setbacks. He knows now when returning home, he's coming back to a safer environment. He actively promotes Aeroseal within the CIRS community and beyond, testament to the profound impact it has had on his home environment and overall well-being.

"Aeroseal has not just sealed my ducts; it has sealed a promise of health and safety within my own walls."

> *The difference was immediate, after the Aeroseal treatment, my home transformed into a safe haven, free from the pollutants that aggravated my condition. It's not just a house; it's where I can heal. Aeroseal has not just sealed my ducts; it has sealed a promise of health and safety within my own walls.*
>
> ***Aaron Pettigrew** - Colorado Homeowner*

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Case Study

Meeting Code In A New Construction Home

PROJECT OVERVIEW

BUILDING:
New Home Construction

LOCATION:
Mankato, Minnesota

AEROSEAL CONTRACTOR:
Aeroseal of Rochester

GOAL:
Meeting building code for duct tightness

BEFORE AEROSEAL:
537.8 CMF -
26% system leakage

AFTER AEROSEAL:
24.2 CMF -
1.2% system leakage

RESULTS:
In less than 4 hours and without demolition, Aeroseal of Rochester was able to seal the duct system and exceed code requirements.

New Home Builder Turns To Aeroseal To Pass Building Code And Finish The Job On Schedule

City Inspectors Amazed By The Amount Of Leakage Remaining After Manual Sealing; And The Ease And Effectiveness Of Using Latest Breakthrough In Duct Sealing Technology

It was near end of day when duct sealing specialist Dan Rollie received a call from a building contractor looking for assistance. Before the General Contractor could get sign off on a new house he was building, he had to show that the leakage rates of newly installed ductwork did not exceed 70 CFM. With the home nearing completion, newly hung drywall and other obstructions made accessing and sealing the duct system impossible without demolishing much of the work that was just completed.

When Dan pulled up in his Aeroseal of Rochester utility truck, the general contractor and the city inspectors were waiting. Neither the General Contractor or the inspectors had ever witnessed the aerosol sealing process before and they wanted to see this innovative procedure for themselves.

It took Rollie about an hour to set up the sealing equipment and prepare the ductwork. Aeroseal measured the duct leakage and the inspectors were surprised to see that, despite manual sealing, the 500+ CFM leakage meant that the home wasn't even close to meeting code. Rollie explained that while the city requires sealing around duct connections, he's found that there is typically excessive leakage throughout the ductwork, even where sealing is required.

Once setup was completed, it took Rollie about a half hour to seal the house. Since Aeroseal works from inside the ducts, no demolition was required to find or seal the leaks. The inspectors watched the equipment monitor to see the leakage rate plummet to less than 25 CFM – well below code requirements. The inspectors quickly signed off on the project and the home was completed on schedule.

> *When you factor in the true cost of manually sealing and testing, Aeroseal in newly constructed homes is the way to go. Not only can it lower costs, but it is faster and more effective than traditional sealing methods. It can be applied any time after the ducts have been installed so it provides unparalleled scheduling flexibility. And since it monitors the sealing process as its working, you know the results right away. No need to call in a third-party to retest – the system generates a final report with the before and after results.*
>
> ***Dan Rollie, Sealing Specialist** - Aeroseal of Rochester*

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Case Study

Path to Net Zero

PROJECT OVERVIEW

PROJECT:
Residential Homes

BUILDER:
New Tradition Homes

LOCATION:
Washington

RESULTS:
Decreased ACH from 2.6 to 0.6 within 90 minutes. This reduction in energy demand means very little solar is required to reach zero energy.

In A Move to Zero Energy, New Tradition Homes is Testing Product Innovation

For 30 years, New Tradition Homes has led the Washington home building market, constructing over 5000 single-family homes. They are recognized as a top builder in the state based on volume, and are known nationally as a leader in building energy efficient homes. Some builders claim to build energy efficient homes, but very few build to the level of New Tradition. All New Tradition homes are certified ENERGY STAR and Built Green Washington 3-star –the only high-volume builder in the state to do so. This commitment to excellence is reflected in company values, which emphasize quality, durability, health, and innovation.

An Industry Leader

In 2005, New Tradition made a commitment to meet or exceed the most stringent standards for energy efficiency. At that time, the builder also committed to focus onindoor air quality, innovation, and continued improvement. Building to high standards is reflected in the company slogan, 'We Build Homes for Life!

Steve Tapio, Building Science Team Leader, has worked for New Tradition since 2003. Tapio says, "We are proud of our awards, but the most important driver for our company is our home buyer – we deliver a home that we would proudly build for our mom. Every home we build must pass the 'mom test'."

The 'mom test' translates into a home that is high quality and durable, costs less to live in, is comfortable, and has healthy indoor air quality. These attributes are directly attributed to building strategies that improve energy efficiency, including mechanical design, duct tightness, and particulate control.

Case Study

Path To Net Zero

> *Within 90 minutes, the ACH went from 2.6 to .6. It was quite remarkable. The application was easy to setup, and the results were immediate. With a .6 ACH, heating and cooling my home just got easier – and cheaper.*

***Ron Nardozza** – Founder & President*
Four Walls Energy Experts

Advanced Envelope Sealing

On a mission to build the best home, Tapio and Helms continuously research new building products and construction strategies, and discovered AeroBarrier. New Tradition wanted to put AeroBarrier to the test – and the timing was perfect. New Tradition was in the process of building a home for Ron Nardozza. Nardozza is New Tradition's third-party energy rater and verifier and the founder and President of Four Walls.

Excited to make his personal home as energy efficient as possible, Nardozza saw AeroBarrier as key to reducing envelope leakage and energy demand. Nardozza said, "Within 90 minutes, the ACH went from 2.6 to .6. It was quite remarkable. The application was easy to setup, and the results were immediate. With a .6 ACH, heating and cooling my home just got easier – and cheaper." Nardozza says the reduced energy demand will mean the 3600 square foot home will require very little solar to achieve zero energy. With the success of Nardozza's home, New Tradition began using AeroBarrier across multiple projects.

The Energy Efficiency Scorecard

The typical New Tradition home scores a 54 HERS Index. (ENERGY STAR requires a HERS Index of 65). Meanwhile, the average, code-built home in Washington state scores a 72 HERS Index. The energy requirement for Built Green Washington requires 10% better than code.

Kelly Helms, New Tradition's CEO, says, "Average, or code minimum, is not an option for us. We are constantly striving for improvement which includes a lower HERS Index. If budget was not an issue, there are a lot of options. But, when considering a new product or new construction strategy, we are challenged with making it standard on every home while remaining market competitive."

> *Average, or code minimum, is not an option for us. We are constantly striving for improvement which includes a lower HERS Index. If budget was not an issue, there are a lot of options. But, when considering a new product or new construction strategy, we are challenged with making it standard on every home while remaining market competitive.*

***Kelly Helms** – Chief Executive Officer*
New Tradition Homes

Case Study

Multifamily: Energy Efficient, Healthier Townhomes

PROJECT OVERVIEW

PROJECT:
3-Story Rowhomes

BUILDER:
Thrive Home Builders

AEROBARRIER CONTRACTOR:
Rocky Mountain AeroBarrier

LOCATION:
Wheat Ridge, CO

RESULTS:
Before AeroBarrier: 5 ACH50

After AeroBarrier: 1.6 ACH50

Leakage Reduction: 70%

Thrive Home Builders Consistently Hits Air Sealing Targets with AeroBarrier

Home builders in the greater Denver area deal with exacting air tightness levels. While some builders might avoid cities with strict enforcement of low air tightness levels, Thrive Home Builders has turned this challenge into an opportunity. In fact, continuous innovation has differentiated Thrive locally and established it as a nationally recognized pioneer.

"We felt it was important to build a brand around energy-efficient homes," said Bill Rectanus, Thrive's Vice President of Home Building Operations. "Making it an option for homeowners doesn't work. But they will pay for a better home. We made energy efficiency a brand standard, regardless of price point."

As a result, every new Thrive home is designed to meet the highest standards, including LEED®, EPA Indoor airPLUS, Zero Energy Ready Homes, and Energy Star®. This has fueled innovation at Thrive – innovation focused on better ways to create healthy, energy-efficient homes within these standards.

> *In addition to sound and odor mitigation, AeroBarrier ensures air from each garage doesn't infiltrate any of the homes.*
>
> ***Bill Rectanus***
>
> *Vice President of Home Building Operations*
>
> Thrive Home Builders

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Case Study

Multifamily: Energy Efficient, Healthier Townhomes

> *AeroBarrier's made our Construction Superintendents' lives less stressful. Eliminating worry about certification is a major benefit.*
>
> ***Bill Rectanus***
> *Vice President of Home Building Operations*
> Thrive Home Builders

Air Sealing Solves Multiple Issues

Thrive's innovation extends to air sealing, using AeroBarrier to reach 3 ACH50 airtightness with the rowhomes at its WestRidge community in Wheat Ridge, Colorado. These three-story, solar-powered homes come with attached garages.

Prior to AeroBarrier, Thrive was having issues with the garage separation walls. They were failing inspection and requiring the installation of fans to pass reinspection – an expensive, unsustainable solution.

"Our townhomes are grouped together in four, five and six units" said Rectanus. "This makes for a lot of shared walls. In addition to sound and odor mitigation, AeroBarrier ensures air from each garage doesn't infiltrate any of the homes."

AeroBarrier emits precise levels of safe, non-toxic sealant mist into the pressurized space, automatically drawing the sealant to leaks around windows, drywall, electrical outlets, recessed lighting, and other areas. The computer-guided process allows tightness to be dialed in and is faster, simpler and more effective than the imprecise and inconsistent manual envelope sealing.

AeroBarrier Passing Tests, Reducing Stress

After Rocky Mountain AeroBarrier applies AeroBarrier for Thrive, finishes are applied before the home's final certification test. An independent energy rater must certify the home's air tightness before it can be handed off to its owner.

"Certification is the final hurdle for our projects," said Rectanus. "AeroBarrier consistently passes the blower door test. It's made our Construction Superintendents' lives less stressful. They know they're going to pass and won't have to scramble to fix any unforeseen issues. Eliminating this issue is a major benefit."

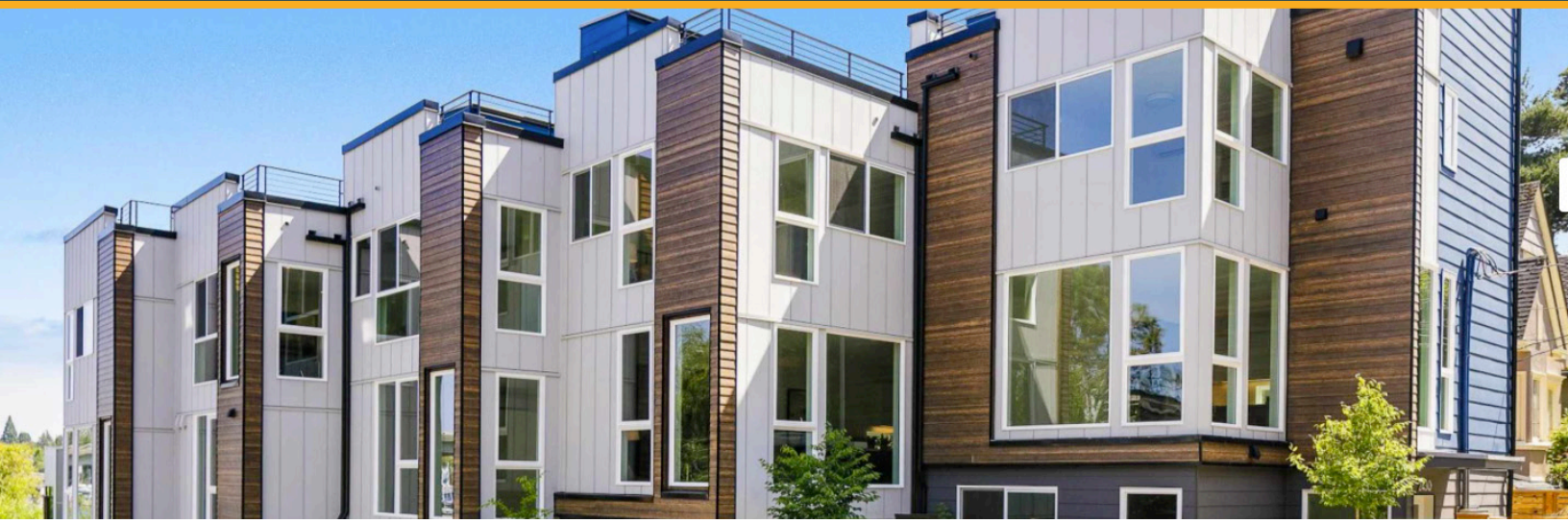
Thrive Focused on Continuous Improvement

Thrive has evolved to make energy-efficiency a competitive point of difference. But the home builder understands this evolution must continue. As a result, Thrive will not rest in its search for ways to improve its homes.

This restlessness and focus on innovation are clearly paying off for Thrive. In addition to being singled out for multiple industry awards, its application of air sealing with garage separation walls is being studied by the Department of Energy.

Case Study

Exceeding Code Requirements



PROJECT OVERVIEW

PROJECT:
The Baymont Townhome Community

BUILDER:
Isola Homes

CONTRACTOR:
Ekovate

LOCATION:
Seattle, WA

RESULTS:
Decreased ACH from 2.6 to 0.6 within 90 minutes. This reduction in energy demand means very little solar is required to reach zero energy.

Isola Homes Exceeds Code Requirements Using AeroBarrier

Isola Homes has built a successful business by making every one of its homes and townhomes environmentally friendly. The Seattle-area housing market has always been dense with homes and competitors marketing their own green housing. And compared to other markets nationwide, Seattle's homeowners are highly aware of green homebuilding, moving sustainability to their must-have lists. These factors are what drive Matt Deveny, Isola Home's Vice President of Construction. Deveny is part of Isola Homes' constant, exacting focus on improving their homes in ways that exceed customer and code requirements to set the builder apart.

Contractors are Key in Reaching Green Goals

"Our homes must improve energy use by 20 percent over codes," said Deveny. "So Isola Homes works closely with contractors to find smarter ways to achieve project goals."

The 20 percent goal is part of the Built Green program. It certifies homes that exceed Washington's state and county building codes using a rating system. Isola Homes projects are designed to earn a four-star Built Green rating.

The steps the builder was taking to achieve this rating included having contractors seal the drywall using caulk. This added step was proving problematic.

"The drywall contractors would sometimes forget the extra step," said Deveny "We wound up assigning someone on our crew to police the work to make sure it got done and sometimes we even had to caulk around outlets and penetrations if we did not pass the blower door test."

Case Study

Exceeding Code Requirements

> *Making air sealing a consistently effective process made the blower door test a non-issue.*
>
> ***Matt Deveny***
> Isola Homes

Making Air Sealing a Consistent, Reliable Process

Deveny turned to Tadashi Shiga for help finding a different solution. Shiga is owner of the energy rating and contractor firm Ekovate. They introduced AeroBarrier air sealing technology to Isola Homes as a way to eliminate this issue.

"We had to see it for ourselves to believe AeroBarrier was a viable option," said Deveny. "Ekovate showed us the air sealing process at one of their projects. The ability to dial in tightness and to know you'll pass the blower door test every time is why Isola Homes uses AeroBarrier."

After Isola Homes began using AeroBarrier, the builder eliminated manual drywall sealing and also saw benefit in being able to schedule around air sealing – a now consistent process; "Not passing the blower door test was more than an inconvenience," said Deveny. "It slowed down the handoff to the homeowner. Making air sealing a consistently effective process made the blower door test a non-issue."

Helping Homeowners See Benefit of Air Sealing

Isola Homes now uses AeroBarrier on 100 percent of its homes and markets this fact to potential homeowners. Its marketing team uses social media and simple, in-home signage to alert potential homebuyers it's been air sealed.

In addition to signaling the extra steps Isola Homes takes to save energy, this also details the impact it has on the home's comfort. In such a dense housing market, many of the builder's townhomes are near street traffic. AeroBarrier's ability to dampen sound makes for a quieter home. And without air from outdoors or the neighbors infiltrating the home, the home's indoor air is also cleaner and healthier.

With its four-star Green Built homes making homeowners happy, Isola Homes is standing out from other builders. But like any successful business, their focus on regular process improvements will continue.

> *The ability to dial in tightness and knowing you'll pass the blower door test every time is why Isola Homes uses AeroBarrier.*
>
> ***Matt Deveny** – Vice President of Construction*
> Isola Homes

Case Study

Near Net Zero

PROJECT OVERVIEW

PROJECT:
Residential Home

BUILDER:
Mandalay Homes

LOCATION:
Prescott, Arizona

RESULTS:
Pre-leakage: >1.4

Post-Leakage: 0.6

Can now achieve net zero with only 8 solar panels on a typical 2,000 sq ft home compared to
60 solar panels. Savings of $50k.

Constructing 3,500 Carbon-Neutral Homes in Arizona

Mandalay's Founder, Dave Everson, is on a mission to scale carbon-neutral (or zero-energy) homes, and offer them as a standard feature on every home they sell. The challenge is making such homes economically feasible and scalable.

The zero-energy formula typically involves loading a rooftop full of solar panels – for a typical code-built, 2000 square foot home, approximately 60 solar panels are needed to achieve net-zero, at a cost of $60,000.

Everson was able to perfect the building envelope with advanced framing and insulation techniques. In 2012, a typical Mandalay home tested at a 74 HERS Index. By 2016, Everson had pushed the performance of a typical home to a 50 HERS Index. But, no matter how disciplined Mandalay was on insulation and envelope sealing strategies, they could not attain better than a 1.4 ACH.

Although this number is significantly better than code, it would still mean 30 solar panels would be required to attain net-zero. At a cost of almost $30,000, the price tag would not allow Everson to offer a net-zero home as a standard feature.

Advanced Sealing Technology – a Lower ACH

When Everson learned about AeroBarrier, he was intrigued. The process seemed perfect for his needs –quick to apply, easily scheduled, economically feasible, and produced consistent results.

The AeroBarrier system reduced the typical Mandalay home from an ACH of 1.4 to .6. With this, Everson had cracked the energy plus homebuilding conundrum, coming one step closer to offering net-zero homes as a standard feature.

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Case Study

Near Net Zero

The Birth of a Carbon Neutral Community

After five years of Everson's determination, and with the help of technology advancements and market competitiveness, Mandalay has broken ground on 3,500 carbon-neutral homes in the master-planned community of Jasper. Everson states, "At Mandalay, we believe the catalyst to the carbon-neutral community is AeroBarrier and it will be used on every home we build."

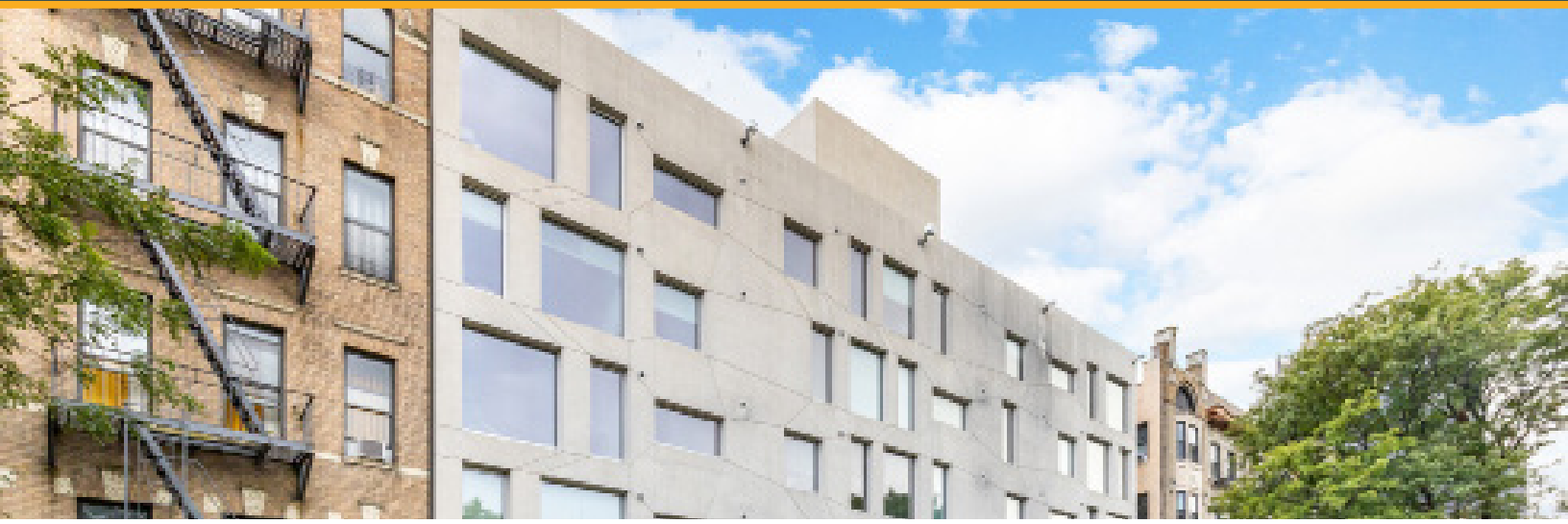
Battery Storage

Around the time of applying AeroBarrier to the first Mandalay home, Everson was experimenting with battery storage. Impressed by their market presence in Germany, high storage capacity, and 28-year battery life, Everson selected sonnenBatterie for his energy storage partner. The result of marrying AeroBarrier technology sonnenBatterie's solution reduced the number of solar panels necessary to achieve net-zero to only eight, at a cost savings of $50,000.

> *AeroBarrier may be the most important innovation to hit the building community in years. We were seeking a tighter building envelope and AeroBarrier answered the call. The technology is easily deploy-able in the field, delivers results immediately which is invaluable, and works well in a fast paced production environment.*
>
> *You may be able to overcome the inefficiencies of manual sealing by repeating the process over and over, but it would require more expensive labor hours and still no guarantee. AeroBarrier is fast and you know the results before you are even finished.*
>
> ***Geoff Ferrell***
> Mandalay Homes

Case Study

Multi-Family Passive House



PROJECT OVERVIEW

PROJECT:
153rd St Apartments

BUILDER:
Synapse Development Group

ARCHITECT:
Upper West Side, Manhattan

LOCATION:
Upper West Side, Manhattan

RESULTS:
Using AeroBarrier, 34 units were sealed to passive house levels of 0.6ACH50 in just 8 days.

AeroBarrier Allows Engineers to Easily Attain Desired Tightness for Energy Efficiency, Comfort, and Livability

Air Sealing Technology Makes Effective Compartmentalization Simple for New York Apartment Building Project

For New York-based architect Chris Benedict, compartmentalization is the holy grail of apartment building design. As a recognized pioneer in energy efficient building, she understands that effectively sealing the envelope that exists between apartments is not only critical for maximum energy efficiency, but it's also key to ensuring indoor air quality and limiting the migration of bugs, smoke, noise, and other common tenant discomforts that can travel from one unit to another.

That's why Benedict was unhappy to learn her latest project, a newly constructed six-story apartment building on Manhattan's upper west side, did not meet the passive house-levels of tightness targeted by her design.

> *It was blowing people's minds – mostly because monitoring compartmentalization in a multi-family building under construction is typically a very difficult, time consuming task. The level of coordination and commitment you need to get from all contractors on the job is as critical as it is nearly impossible to achieve. With AeroBarrier, it's simply not a problem.*
>
> ***Chris Benedict** – Architect*
> CBRA

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Case Study

Multi-Family Passive House

While the manual caulking implemented by contractors got them close, it did not meet the industry's highest standard. Now with plumbing, electrical and sheet rock installation finished, the building was almost finished and further manual sealing was impractical and would delay project completion.

Fortunately, Benedict had heard about the AeroBarrier process. The AeroBarrier system allowed precise levels of tightness to be dialed in. After AeroBarrier proved successful at sealing a test unit, contractors sealed the remaining apartments within the building.

The ability to monitor compartmentalization in a multi-family building under construction is typically a very difficult, time-consuming task. The level of coordination and consistency you need to get from all of the contractors on the job is critical yet hard to achieve. With Aerobarrier, that is simply not a problem.

It took the AeroBarrier team just 8 days to seal all 34 units to passive house levels of 0.6 air changes per hour at 50 Pascals pressure (ACH50). Blower door tests conducted after the application of the AeroBarrier technology confirmed the results – AeroBarrier was a project-saving success.

Case Study

Multi-Family Development Goes Solar

PROJECT OVERVIEW

PROJECT:
Soleil Lofts, a 600-Unit Multi-Family Building

BUILDER:
The Wasatch Group

CONTRACTOR:
AeroBarrier West

LOCATION:
Herriman, UT

RESULTS:
Pre-Leakage: 10 ACH50 average per unit

Post-Leakage: < 1 ACH50 per unit

Rebates added up to more than the cost of AeroBarrier – a 150% return on investment

600-Unit Multi-Family Development Goes Solar Using AeroBarrier

The Wasatch Group knew Soleil Lofts was an ambitious project during the design phase. A first of its kind development, featuring 600 solar powered, all-electric apartment units certainly sounds ambitious. But a unique issue was driving the Salt Lake City real estate developer.

Winter Air Quality Issues Drive Net Zero Design

The picturesque mountain ranges surrounding the Salt Lake area create a valley and, during the winter months, inversions. Inversions are when warmer air above the valley traps cooler air near the ground. Fine particulate emissions are trapped in the cooler air, creating a smoggy haze, and decreasing air quality. Soleil Lofts had to be a net zero development – addressing this issue without contributing to it.

“We knew we had to reduce energy consumption by 50 percent to support solar,” said Josh Roy, Wasatch Group’s Vice President of Sustainability. “The AeroBarrier technology consistently gave us the results we needed. By making air sealing a dependable process, we were able to make changes in the design phase that were critical to this project’s success.”

For solar to work, energy storage was also paramount. Wasatch addressed this by creating a “virtual power plant” – a network of battery storage systems managed by the local utility. When it came to energy reduction, Wasatch explored multiple options.

Air Sealing Unlocks Savings During Design Stage

“We looked at other energy efficiency measures, including lighting and appliances, but energy modeling showed us they aren’t as cost-effective as air sealing,” said Roy.

Case Study

Multi-Family Development Goes Solar

> *The AeroBarrier technology consistently gave us the results we needed. By making air sealing a dependable process, we were able to make changes in the design phase that were critical to this project's success.*
>
> ***Josh Roy***
> The Wasatch Group

AeroBarrier Makes Short Work of Party Walls

Shared walls between multifamily homes are an issue for builders and homeowners alike. They are more difficult to air seal effectively, leading to issues when trying to meet code. And research from the University of Toronto shows up to 20 percent of a neighbors' air can transfer into a home through a shared wall. That's why sounds and smells seem to infiltrate multifamily homes so easily.

The issue has been accepted as unavoidable, with no reliable solution, until AeroBarrier. By sealing the various gaps in shared walls, odors from air infiltration are stopped and sounds are also mitigated. These issues aren't always high on the builders or homeowners list of concerns – if at all. But Josh Roy, Wasatch Group's Vice President of Sustainability, has seen AeroBarrier's sound mitigation improve the home-buying experience.

"Going into a fully-furnished unit with AeroBarrier, you notice the difference," said Roy. "It signals you're in a well-built, quality home."

AeroBarrier was chosen because the project needed a level of consistency and precision not seen in manual air sealing. Wasatch was relying on the air sealing process for more than simply meeting code.

"During the design phase, we realized if air sealing could bring all 600 units could down to a 1 ACH50 we could reach our performance goals with HVAC systems half the size we originally planned," said Roy.

The AeroBarrier technology emits precise levels of safe, non-toxic sealant mist into the pressurized space, automatically drawing the sealant to leaks around windows, drywall, electrical outlets, recessed lighting, and other areas.

"AeroBarrier gave us the confidence to not overcompensate with an oversized HVAC system to hit our performance goals. This cut our HVAC costs in half and reduced the amount of capital invested in mechanicals."

Utility Rebates Deliver a 150% ROI

AeroBarrier air sealing helped Soleil Lofts qualify for several different utility rebates. In fact, the rebates added up to more than the cost of AeroBarrier – a 150% return on investment.

The rebates are just part of the impact air sealing has had on this project. There have been no homeowner issues or callbacks due to comfort. Since they're able to stay comfortable year-round without pushing their mechanicals to the limit, homeowners are seeing utility savings and getting longer life from their HVAC systems. And during the winter months, no pollution is infiltrating their home, while ERVs ensure they have clean and healthy indoor air.

"AeroBarrier makes it possible to cost-effectively create a high-performance home using standard quality materials," said Roy. "It's exceeded our expectations and our architects have added it as a specification for future projects."

And if there were any doubt The Wasatch Group more than achieved the ambitious goals set for this project, the all-electric, solar-powered multifamily community is also one of Utah's largest net zero projects.

> *The AeroBarrier technology consistently gave us the results we needed. By making air sealing a dependable process, we were able to make changes in the design phase that were critical to this project's success.*
>
> ***Josh Roy***
> The Wasatch Group

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