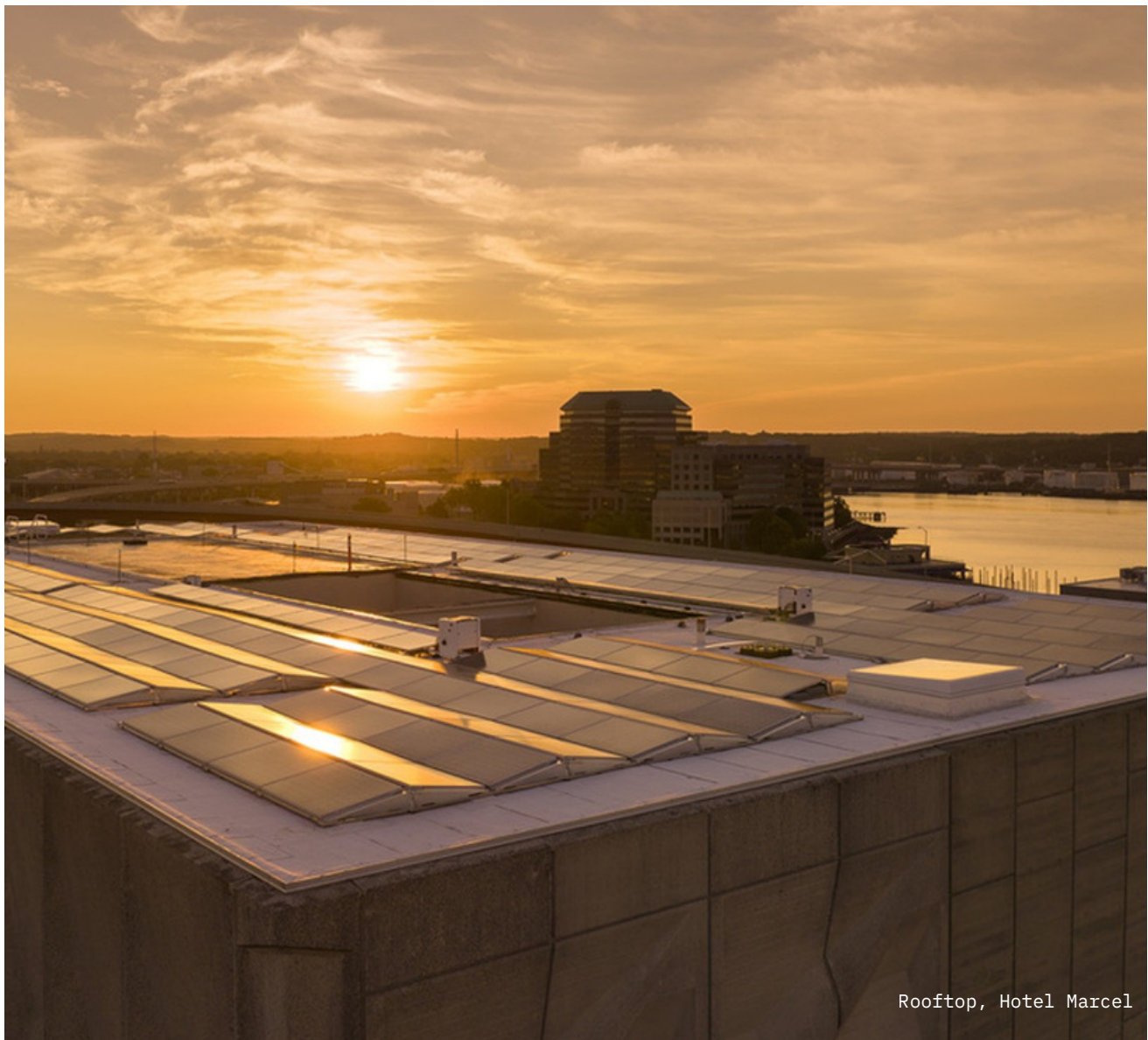


The ROI of Efficiency

Passive House Hotels



The
Passive House
Network



June, 2026

The Passive House Network
1250 Broadway, 36 Floor
New York, NY 10001

The Passive House Network (PHN), is a 501(c)3 that provides Passive House high-performance building education and resources to professionals across the U.S. that transform how they think and work with buildings. PHN provides professionals a complete skill set to reliably produce new and renovated buildings that use dramatically less energy for effective and affordable climate action.

Find out more at www.passivehousenetwork.org



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Hotel Marcel Sunken Lounge

Controlling Costs Without Compromise

It's easy to see that the Hospitality Industry has changed in the last 10, 20, or 100 years. Guest expectations have shifted, demands have changed, and industry norms are routinely challenged. Energy costs are also rising, creating uncertainty for operational budgets. There's more pressure than ever to deliver a quality guest experience at a reasonable price point, but misaligned interests between owners, brands, and hotel operators make it difficult to find a holistic solution. This is where Passive House can help.

The same design decisions that can lower the ownership costs of heating and cooling air and water can also ensure that your guests have a good night's sleep. Rooms won't be too hot, too cool, too humid, or too dry. Guests can sleep soundly, without being disturbed by rolling luggage in the hallway or a neighbor's early alarm. The room stays comfortable, and pests like mice and spiders will be kept out. A great guest experience leads to excellent reviews and repeat customers.

Simultaneously, Passive House boosts the net operating income. Reduced energy and maintenance costs increase earnings. These low operating expenses protect against energy volatility and high inflation, leading to predictable costs. In the face of extreme weather events, this de-risks ownership, operation, and brand reputation.

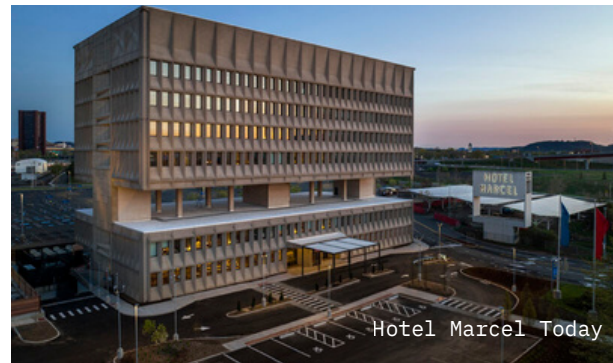
It is also becoming an indispensable design and building standard in places like Boston and New York City, where local Building Performance Standards (BPS's) are placing limits on Greenhouse Gas emissions from larger buildings. As these limits are put into place, more owners are choosing to de-risk their portfolios by choosing the reliable performance outcomes offered by the Passive House standard.

Passive House can also draw more business and prevent empty rooms. According to the [World Sustainable Hospitality Alliance](#), 80% of travelers view sustainable travel as important, and 66% would like to leave places better than when they arrived. The built-in sustainability of Passive House satisfies these wishes, but even those who are not on the lookout for sustainable lodging will appreciate the comfort, calm, and quiet that is innate to any Passive House building.

Passive House hotels are already a reality for travelers in Australia, Spain, Austria, and of course, in New Haven, Connecticut at Hotel Marcel. We invite you to look through the data that shows why Passive House is becoming the baseline for comfort, cost, and efficiency throughout the world.

Passive House, Hospitality, and Cost Savings

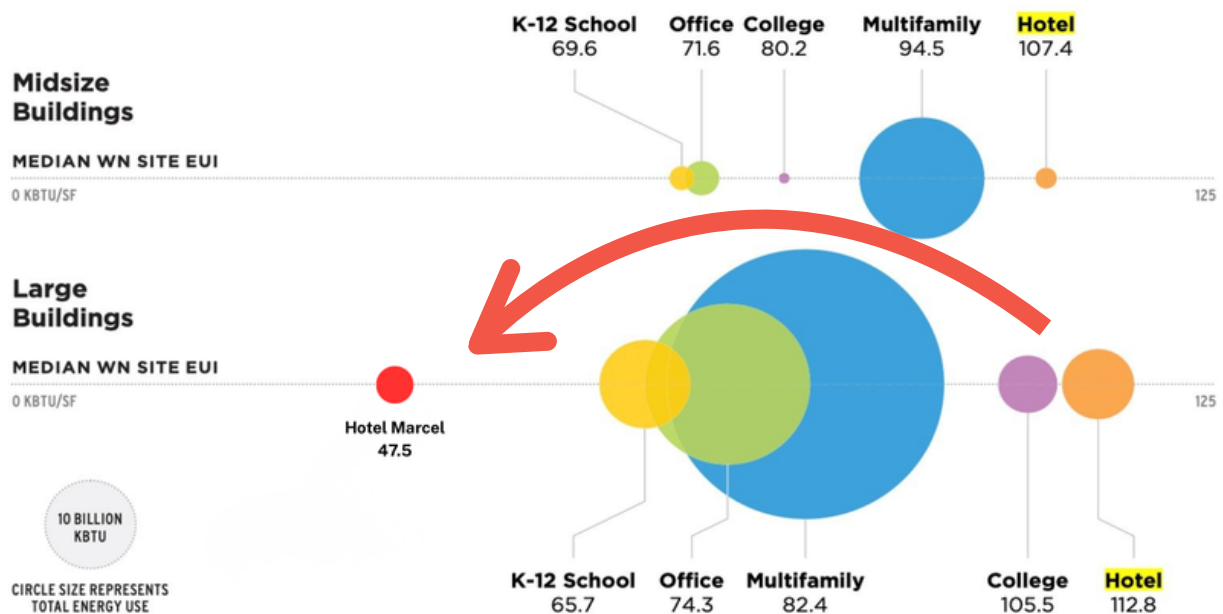
The building that would become Hotel Marcel sat empty for years before it was renovated. It now contains 165 rooms, an all-electric restaurant, 9,000sf of meeting space, and a fleet of electric shuttles that allow guests to travel through the local community.

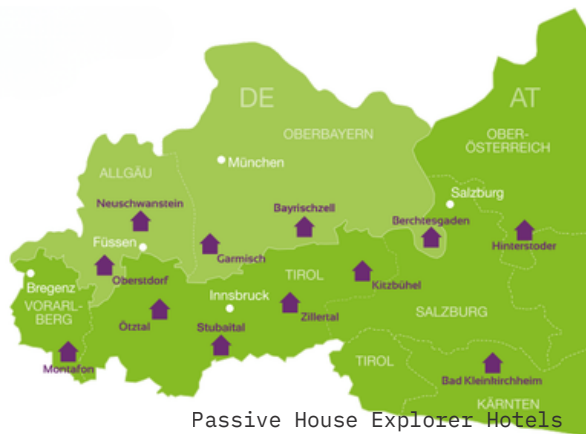


Most importantly, it meets the Passive House EnerPHit standard as a highly energy-efficient retrofit. It is completely fossil-fuel free. The HVAC, hot water, kitchen, and laundry are all powered by electricity, and because they were designed to run more efficiently, much of it is powered by solar panels on the rooftop and parking lot canopies, which produce 575,000 kwhs annually.

According to [New York City's Energy and Water Use Report](#), hotels often have the largest Energy Use Intensity (EUI) compared to other building sectors. This is not true of Hotel Marcel, which has lowered its EUI score by **58%** compared to other large hotels in New York City.

Total Site Energy Use and Intensity by Building Sector, 2019



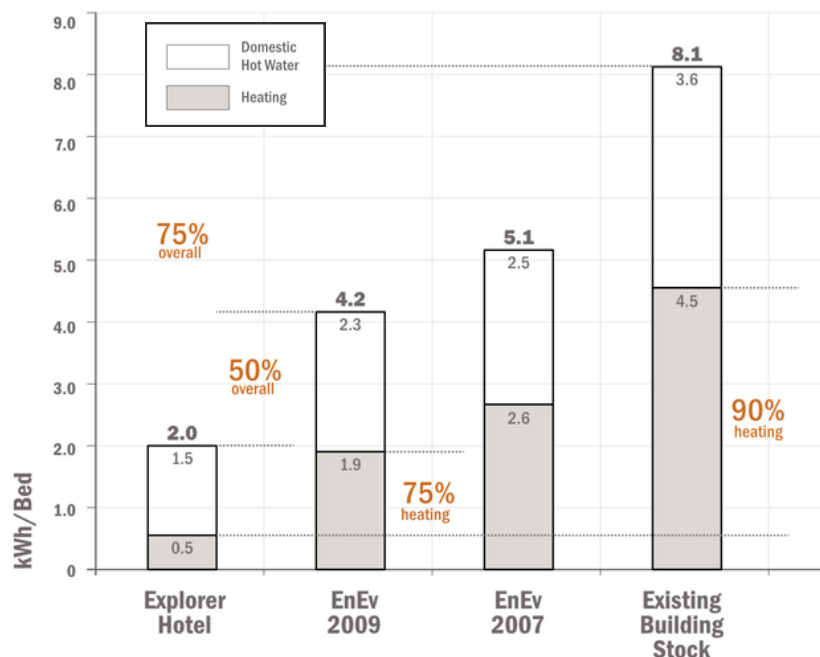


Similar results have been seen at other Passive House hotels. Based in Austria, **Explorer Hotels** has built 12 Passive House hotels in the Alps since 2010. They broke ground on a thirteenth Passive House hotel in April of 2026.

Despite the freezing temperatures and the high energy demands of a ski resort, each of their buildings uses significantly less energy than other comparable hotels. Explorer Hotels has at least 10 more Passive House hotels in development, in part because of the cost and energy savings Passive House affords.

The results of both Hotel Marcel and Explorer Hotels show a significant operational cost reduction. Passive House design and construction have reduced Hotel Marcel's EUI by 61% from conventional hotels in the United States. Explorer Hotels averages a 75% EUI reduction from Europe's existing building stock and a 50% reduction from the 2009

Comparison of EUI in kWh/Bed



EnEV standards (the minimum building requirements in Germany). This represents a compelling return on investment for operational savings for both heating and domestic hot water.

Important, too, is the predictability that Passive House grants owners in times of energy volatility. In radically reducing the energy needed for daily operations, both brands have effectively insulated themselves from rate hikes.

Hotel Marcel Cost Considerations and Outcomes

Passive House lowered the operational costs of an occupied room by \$11 a night at Hotel Marcel. A modest sum on the surface, **this savings translated to annual expense reduction of \$450,000, and, using a cap rate of 7.5%, an increase in asset value by 6 million.**

To get there, developers invested in Passive House design, components, and electrification infrastructure. Passive House design increases construction costs by just 2%. Certified windows added \$250,000, but allowed for a more efficient HVAC plant. Electrifying hot water, HVAC, laundry, and kitchens cost another \$250,000. The solar roof, canopies, and battery microgrid added \$2 million.



Hotel Marcel Project Finance

Bank Loan from Libery Bank 4.5% 10 yrs	\$25 Million
Developer Equity with Opportunity Zone Tax Deferral	\$15 Million
Federal & State Historic Tax Credit Equity Bank of America	\$13 Million
State of Connecticut waiver of sales tax on materials	\$500,000
Commercial Property Assessed Financing (CPACE) 6% 20 yrs	\$6 Million
30% IRA Federal Energy Tax Credit for Solar, Battery, Microgrid	\$1 Million
Energy Conscious Blueprint Grant from United Illuminating	\$500,000

Total Sources used to fund Development Costs.....\$61 Million
Conventional Equity and Debt (net of incentives).....\$40 Million
Conventional Equity and Debt per key.....\$242,424

Much of this increased cost was offset by tax credits and utility rebates incentivizing efficiency. CPACE financing reduced the total equity and debt required. All told, Passive House Certification added \$1.5 million to the project total, easily worth the \$6 million in increased asset value.

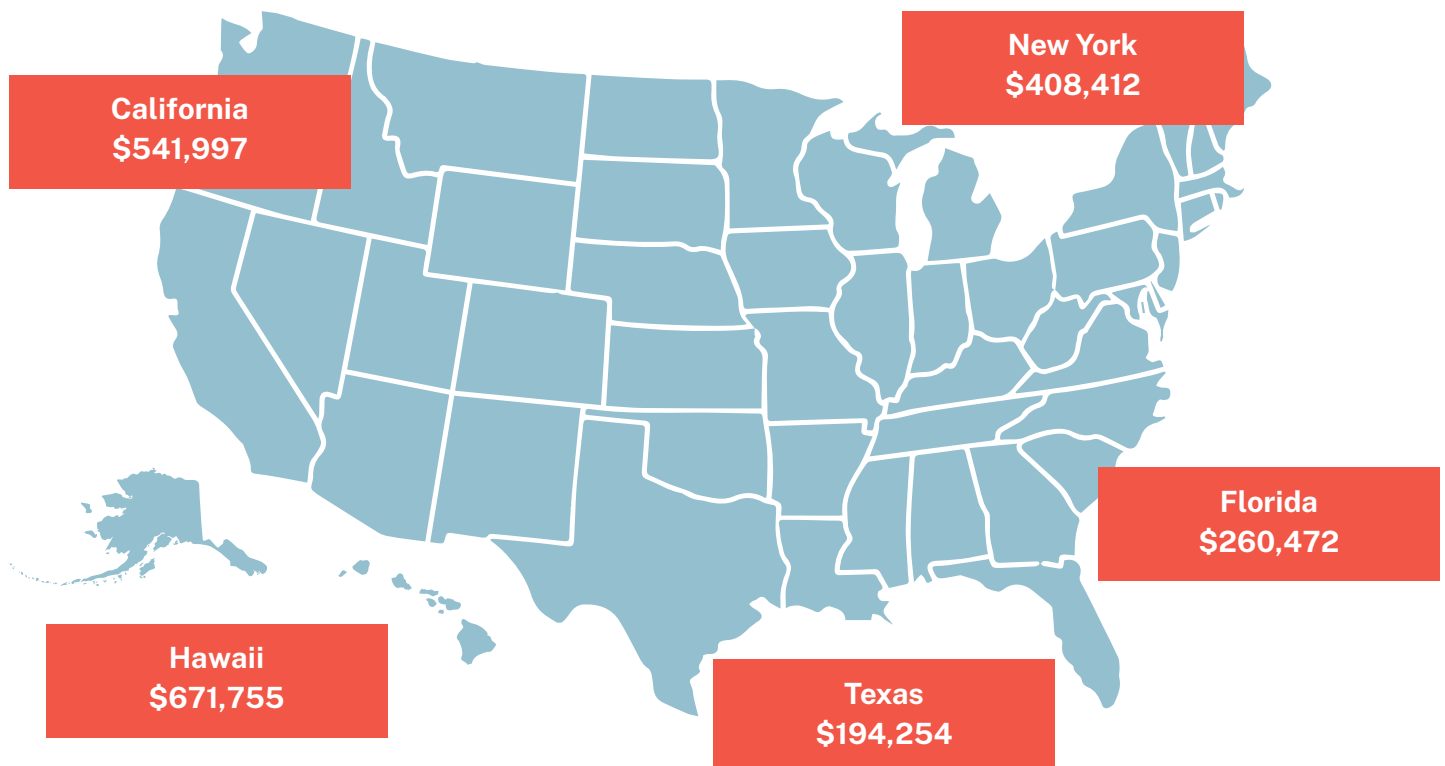
The Profit Picture

By reducing its EUI by 58%, Hotel Marcel has significantly widened its profit margins. This EUI reduction is financially equivalent to booking an extra 2,700 rooms at \$200 — but at no extra cost.

This savings scales with the building, and is amplified in areas where utility costs are more expensive. Many of these areas overlap with popular tourist destinations, creating an opportunity for growth, savings, and brand recognition. The Passive House standard can also be applied retroactively to a building during an [EnerPHit](#) renovation, as is the case with Hotel Marcel.

Annual Cash Saved Per 100,000 SF Regional Hotel

Using Baseline Cost (112.8 EUI) > New Cost (47.5 EUI)



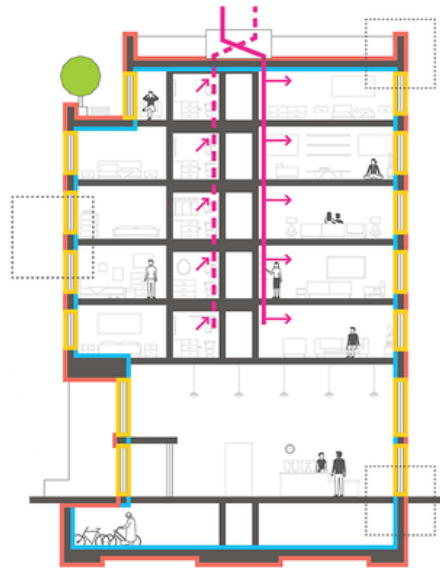
SOURCE: PHN developed. Based on regional cost reduction for a standard large hotel format (100,000 square feet) based on Data Commons energy pricing.

What is Passive House?

Passive House utilizes the basic principles of building science to ensure occupant comfort and health while dramatically reducing energy use and carbon emissions.

The approach is built on 5 principles:

-  **airtightness**
-  **continuous insulation**
-  **thermal bridge free construction**
-  **high performance doors and windows**
-  **energy recovery ventilation**



Source: Building Energy Exchange

Together, these principles drive energy and cost efficiency, and there are other benefits too. Passive House design creates an indoor space that is pleasant to be in. Rooms are quiet, thermally comfortable, and free of mold and pests. Indoor air quality is protected, even during smoke events caused by wildfires. A hotel built to the Passive House standard becomes the ultimate sanctuary for guests, employees, and everyone who passes through.

Thermal Comfort

Passive House design works in all climates to keep indoor spaces at the optimal temperature for comfort. Insulation and an airtight seal create a thermos-like effect, keeping you cool in the heat, like the [Arima Hotel & Spa](#) in San Sebastian, Spain, and warm in the cold, like the Explorer Hotels across the Austrian Alps. Passive House construction methods also prevent mold from growing on or inside of the walls and at windows & doors.



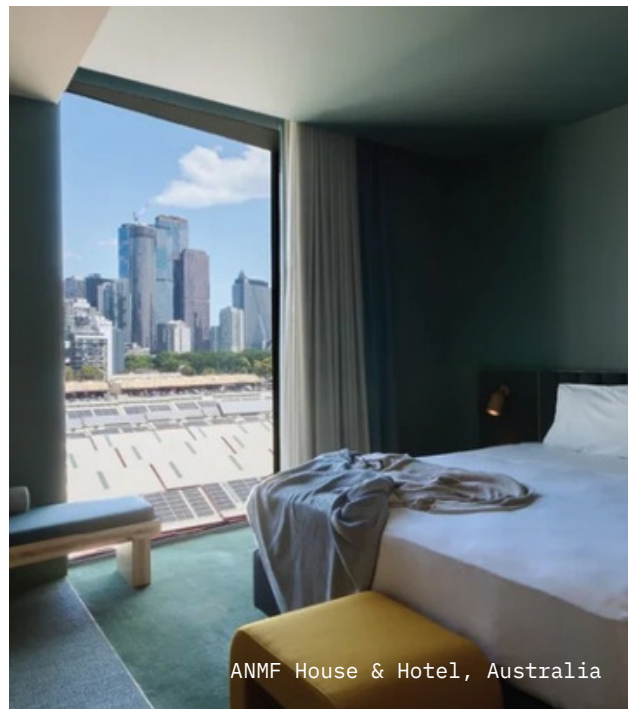
Healthy Air

Passive House design ensures fresh, filtered air is delivered continuously throughout the building. This keeps guests feeling refreshed, and it also creates a more hygienic space where airborne illnesses are less likely to spread. This is a vital reason why the owners and developers of the **ANMF House & Hotel**, which serves as a short-stay accommodation for members of the Australian Nursing and Midwifery Federation, chose to build to the Passive House standard.

The Sustainably-Minded Guest

As previously mentioned, the 10 Explorer Hotels in Austria are all built to the Passive House standard. In addition to the comfort, health, and energy-efficiency that Passive House brings, Explorer Hotels has tapped into a new benefit — market distinction.

Sustainability is central to the Explorer Hotel branding, and their mission is one that resonates with their guests. The environmentally friendly lodging preserves the natural beauty that guests have traveled to enjoy. Passive House was the easy choice to make for a guest experience that also focuses on regional food, sustainable transportation, and water conservation.



ANMF House & Hotel, Australia



Explorer Hotel Kitzbühel



Sustainable vacations are important. Feeling completely at home while also feeling good about the environment – sounds like the perfect vacation idea. And if you can stay in a sustainable hotel, then you're completely happy?

We are too!



– Explorer Hotels Website

Resources from The Passive House Network

The Passive House Network supports the design and construction of buildings that are efficient, comfortable, affordable, resilient, and healthy by providing training and resources to practitioners. Research has shown that Certified Passive House Designers, Consultants, and Tradespeople keep costs low while delivering predictable, high-performance results.

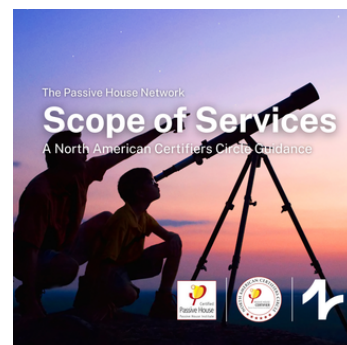
Learn more about Passive House with our free online [1 Hour Intro to Passive House Course](#), and dive deeper into the material with our [Certified Passive House Designer Course](#), held online once a quarter. Learn more on our website.

Certification

Certifying your Passive House building offers enhanced quality assurance. Working with a Building Certifier benefits designers throughout the planning process. [The North American Certifiers Circle \(NACC\)](#) is a group of organizations actively certifying buildings to the international Passive House standards in North America. The NACC works cooperatively to serve the public.

The Passive House Network has developed the [Building Certifier Scope of Services](#) that can inform your discussions when reaching out to Certifiers. We encourage Passive House customers and Certifiers to use this resource to clarify the process and fees associated with the work.

To find professionals in your area, take a look at the [Consultants, Builders, & Certifiers Directory](#).



Acknowledgements

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Hotel Marcel Meeting Room

