



Community Office for Resource Efficiency

655 Monastery Cutoff Road

Snowmass, Colorado

Local homeowners rebuild an all-electric home with solar panels and batteries after losing their previous home to a fire.

December 2025

Table of Contents

Executive Summary.....3

Purpose Statement.....5

The Opportunity.....6

 Project Overview.....6

 Project Team.....8

 Project Costs.....9

 Building Specifics.....10

Problem to be Solved.....10

Process for Solving Problem.....12

Lessons Learned.....15

Results of Process.....17

Graphs and Tables.....18

Concluding Statements.....19

Acknowledgments.....19

Sources.....19

Executive Summary

This case study examines the rebuilding of an all-electric, high-performance home in Old Snowmass, Colorado, after a devastating 2022 fire destroyed the original structure. Faced with immense loss, homeowners Clint Coerdts and Kate Sartain initially questioned whether to remain in the Roaring Fork Valley. The overwhelming support from friends, neighbors, and the broader community ultimately anchored their decision to rebuild on their 40-acre property and to create a home that honored the past while embracing a sustainable future.

From the outset, the homeowners committed to building a resilient, fossil-fuel-free home powered as much as possible by renewable energy. Drawing inspiration from the book *Pretty Good House* and guided by architect and neighbor Al Beyer along with a multidisciplinary design and construction team, the homeowners shifted the new build slightly uphill to capture better solar exposure and avoid the cold-air drainage that plagued their previous home. This strategic siting, combined with a simple, solar-oriented roof and improved insulation and air-sealing, laid the groundwork for a high-performance building envelope that would support full electrification.

The project brought together multiple partners—including Al Beyer Design, Forum Phi, TE Builders, Green Electrical Solutions, Axion Dynamics, the Community Office for Resource Efficiency (CORE), and Holy Cross Energy—to integrate modern electric technologies into the home from the ground up. The resulting system includes heat pumps, electric radiant heat, efficient water heating, induction cooking, a 9.6 kW solar array, and 60 kWh of battery storage enrolled in Holy Cross Energy's Power+FLEX program. CORE provided a \$15,000 incentive to support electrification, while the Power+FLEX program made battery storage financially viable through rebates and monthly bill credits.

The collaborative process solved multiple challenges: the need for reliable heating in a cold microclimate, avoidance of propane delivery on a long north-facing driveway, the desire to reduce environmental impact, and the importance of building a more fire-resilient structure. Continuous engagement with technical experts ensured the systems were designed holistically and aligned with the homeowners' vision for a comfortable, future-ready home.

Today, the completed home represents a significant improvement over the original structure. It is safer, more energy efficient, more comfortable, and drastically less reliant on the grid.

This case study offers valuable insights for architects, designers, builders, energy professionals, emergency responders, policymakers, and anyone seeking to rebuild or construct an efficient, sustainable home. It underscores that small, intentional design decisions can yield large performance improvements—and that community, vision, and technical collaboration can turn tragedy into an opportunity for long-term resilience and renewal.



Coerdt and Sartain Solar and Electric Home in Old Snowmass, Colorado

Purpose Statement

This case study offers insight into a homeowner's project to build an all-electric home in a remote area of the Roaring Fork Valley after a devastating fire destroyed their previous home in the same location. The homeowners were determined to future proof their new house by powering it with as much renewable energy as possible.

Rebuilding in a subtly different site on the 40-acre parcel allowed the building to capitalize on better sun exposure and micro-climate behaviors that impact the indoor and outdoor home environment.

The advantage of rebuilding from the ground up in the same location allowed lessons from the past to take a critical role in how to best move forward. The previous home didn't function well – it was drafty and not well insulated among other issues – initiating greater clarity for the homeowners regarding what they didn't want and what they saw could improve on the site and in a new house.

This project is a testament to moving forward with a strong vision accompanied by community support. It also illustrates that small changes can have big results.

"If you're going to build something, do it with the mindset that you're going to live in this forever and get it as future proofed as possible. So, I started looking at all those things, and main one that kept on coming up is get off fossil fuels if you can. Go renewables, any which way you can."

– Clint Coerd, homeowner

Those who may benefit from this case study include the following:

- Architects
- Designers
- Energy sector professionals
- Fire department professionals
- Code enforcement professionals
- Those wanting to rebuild or build for the first time
- Policymakers
- Individuals seeking to build or retrofit to all-electric building

The Opportunity

Project Overview

In 2022 a devastating fire destroyed the log home of Clint Coerdts and Kate Sartain in Old Snowmass, resulting in the loss of Coerdts' parents and beloved pets. The couple, soon to be married, considered leaving the Roaring Fork Valley after so much hurt and loss but witnessing the community come together to support them through in-person and online fundraisers, Coerdts and Sartain chose to rebuild.

"This beautiful community put us back on our feet," Coerdts said. "We wanted to rebuild on our property and make a nod to my parents and put this place back where it was and make this our home by building something new in the ashes of what we lost."

Coerdts picked up a book called [*Pretty Good House: A Guide to Creating Better Homes*](#), which greatly influenced his thinking about high performance, value, and empowering homeowners. The book's philosophy helped clarify the type of dwelling the couple wanted to rebuild on their 40-acre property. They were committed to long-term sustainability, comfort, and resilience.

Guided by architect and neighbor Al Bayer, they selected a new location on their land —slightly higher and sunnier than the original site—to avoid cold-air drainage and improve year-round solar exposure. The aim was to construct a modern, efficient home roughly comparable in size to the original, but transformed in terms of energy use and performance.

From the outset, the goal was to go all-electric and eliminate fossil fuels, both to future-proof the home and avoid the challenges of propane delivery on a long, steep, north-facing driveway. The previous house relied on electric baseboard heat and a pellet stove that struggled to keep the space comfortable; the rebuild offered a chance to design a high-performance structure with fireproofing elements from the ground up.



SolaX Power Solar Storage Battery

Working with Al Beyer Design, Forum Phi Architecture and Interior Design, TE Builders, Green Electrical Solutions, and Axion Dynamics, the team designed a simple, steep, solar-oriented roof to support a large photovoltaic array and created a fully electric mechanical system. The house now uses heat pumps, electric radiant heat with a buffer tank, efficient electric water heating, an induction cooktop, and battery storage connected through Holy Cross Energy's Power+FLEX Program. Through Power+FLEX, the utility offers rebates and bill credits for battery storage systems and manages the batteries for grid flexibility, making backup storage affordable and functional. The system enables net metering, with solar production meeting most needs in sunny months and stored energy powering the home overnight.

“We’re here for the long haul until I can’t run this property anymore. And so, building from the ground up we had to look at future practices and what’s actually going to make sense. Fossil fuels are not going to make sense. Renewables are getting better every year, and we wanted to be at the vanguard of that. So, we just wanted to future proof this house, so that we could run on solar and heat pumps and electrical.”

– Clint Coerdts, homeowner

The Community Office for Resource Efficiency (CORE) became a critical partner early in the design and equipment selection process. CORE staff helped identify rebates, evaluate options, and guide decisions toward full electrification. The project received CORE’s maximum grant of \$15,000, supporting heat pumps, induction cooking, and electric water heating. Although a small fraction of the total investment, the grant provided meaningful support at a crucial stage and underscored CORE’s role as a community-focused advisor.

Today, the completed home offers dramatically improved comfort, rapid and even heating, and the ability to operate year-round without fossil fuels. The project demonstrates how thoughtful siting, simple solar-oriented design, strong partnerships between CORE and Holy Cross, and modern electric technologies can help homeowners rebuild resilient, efficient homes—even in challenging mountain climates.

Project Team

The project partners were imperative in the overall success of the new home.

- Homeowners Clint Coerdts and Kate Sartain
- Al Beyer Design
- Form Phi Architecture and Interior Design
- TE Builders
- Green Electrical Solutions
- Axion Dynamics
- Holy Cross Energy

Project Costs

Solar Panels: \$37,440 (Green Energy Solutions contributed \$6,024 as charitable contribution)

Solar Batteries: \$58,737 (Green Energy Solutions contributed \$2,936.88 as charitable contribution)

Heat Pumps: \$138,534.17

Total Project Cost with Planning and Design and Construction: \$3.8 million

CORE Contribution: \$15,000 for heat pumps and induction cooktop, buffer tank, radiant water tank, regular water tank

Holy Cross Energy Rebate: \$15,000



Lochinvar electric heat pump water heater

Building Specifics

Location: 655 Monastery Cutoff Road, Snowmass, Colorado

Building Type: Steel frame, concrete basement, wood and metal walls, timber deck

Square Footage: 3,400

Year Built: 2025

Utility Provider: Holy Cross Energy

Heating and Cooling System: Mitsubishi radiant and ducted mini splits. Radiant is a Spacepak Solstice heat pump that works in conjunction with a Mestek hydronic buffer tank to pump water through two inches of concrete and wood topped floors.

Domestic Hot Water: Lochinvar electric heat pump water heater

Electric Features: GE Induction cooktop

Solar Infrastructure: 9.6 kWdc REC 400NP3

Solar Battery: Emporia/SolaX Power batteries 60 kWh

Electric Service Size: 800 amps

Problem to be Solved

Clint Coerdts and Kate Sartain faced the challenge of rebuilding their home after a devastating fire destroyed the original structure. With the homeowners questioning whether they wanted to stay in the Roaring Fork Valley or leave while being impacted by catastrophe and trauma, it wasn't a straightforward decision until Coerdts and Sartain witnessed the compassionate and steadfast support of the community. Then the path toward healing was clear: rebuild in place with a group of committed professionals who were able to provide tangible and meaningful solutions.

Beyond replacing what was lost, the couple needed a home that could function reliably on a remote, high-elevation property with difficult winter access and pay

homage to the best elements of their past and manifest a positive impact on their future. Their previous house had struggled with uneven heating, reliance on pellet stoves, poor insulation, and inefficient electric baseboards, which left parts of the home uncomfortably cold. These issues underscored the need for a new mechanical approach that would create consistent comfort while embracing sustainability, an ethic Coerdt and Sartain were committed to. In addition, making the structure more fireproof was essential and integral to the design and choice of building materials.

Their neighbor and architect Al Beyer described their former home as "kind of a dog, it did not respond to the climate. It was kind of the American cowboy log home with the porches on it, heavy and not well insulated, not well suited and not well positioned in this low drainage where cold air would come through."

The home's prior location introduced additional constraints such as low to no winter solar gain which caused temperature swings. The long, steep, north-facing driveway made propane delivery risky and inconvenient—even dangerous in bad weather. Relying on propane in the new home would mean tying essential systems to a fuel source that was logistically unreliable and environmentally unsustainable. The homeowners therefore needed a solution that eliminated fossil fuels, improved reliability, and leveraged on-site environmental advantages such as solar exposure.

Finding affordable solutions was also a challenge. The battery system alone would have been between \$30,000 and \$40,000 without support. Grants, incentives, and technical guidance would be essential to make the project financially viable.

Another layer of complexity came from navigating the rebuilding process itself: coordinating with builders, selecting equipment, securing rebates, engaging with CORE and Holy Cross Energy, and ensuring the new design worked holistically. Without a clear vision and a goal to future-proof the home, the homeowners could easily have replicated the old house's inefficiencies. Instead, they needed a pathway to understand modern, all-electric systems, solar energy potential with battery storage, evaluate options, and create a home that was not just rebuilt, but rebuilt smarter. Once that happened, it was important to find ways to ensure that systems and building practices were in place that functioned in sustainable ways and supported efficiency.



RenewAire Energy Recovery Ventilation provides energy-efficient ventilation and lower energy costs

Process for Solving Problem

1. Assess Needs and Priorities

The first step was understanding the full scope of project and what was required emotionally, physically, financially, and technically. This included evaluating what would be required to build, site opportunities and challenges, finding the right team, securing the funds, assessing what the previous home lacked (poor insulation, uncomfortable temperatures, inefficient heating) and identifying what the new home needed to provide: comfort, resilience, lower operating costs, and sustainable solutions. This assessment established the foundation for decision-making.

1. Site Analysis

Understanding and identifying the optimal site to build on, for solar gain and to avoid cold micro-climates, was essential. The previous house was situated in a low

drainage area and altering the home's location would improve livability, comfort, and views.

“What we did was shift the position of the house to a little bit of a sunnier aspect instead of the bottom of the drainage where the cold air would sink each night. Now, it’s a better solar site, and subtly different from the other place it was. It gets more sun in the middle of winter. It’s amazing how small little things can make a difference. I think that’s something that people could relate to and learn from in this project.”

– Al Beyer, architect, Al Beyer Design

3. Establish All-Electric Goals and System Requirements

Once rebuilding was confirmed, the owners defined a clear objective: create a fully electric home that is safe, efficient, comfortable, and independent of fuel delivery risks. This step involved collaborating with the build and design team to identify performance goals for systems like heating and cooling, solar production, battery storage, cooking, domestic hot water, and backup power. This clarity directed every engineering and design choice that followed.

4. Engaging Technical Experts

While Coerdts had the vision and was inspired by *Pretty Good House*, he wasn't a builder. He said, "I can put together a chicken coop, but I'm not going to build a house. I will help where I can, but I'll leave that for the professionals." Little did he know that after the fire his neighbor, architect Al Beyer had sketched out a new house design soon after the fire. "He didn't show us for months," Coerdts said. Beyer was waiting until they were ready. Once the decision was made to rebuild, finding the right team was essential. Specialists were brought in to provide guidance on design, construction, electrification strategies, and available incentives. This included: architects, engineers, and energy specialists at CORE and Holy Cross Energy.

5. Design the Home Around Safety and Energy Efficiency Systems

The design process integrated energy systems into the architecture rather than treating them as add-ons. Items that were included from the beginning of the project included south-facing roof optimized for solar, adequate electrical capacity

for heat pumps and battery storage, a layout that maximizes winter sunlight, improved insulation and airtightness to prevent the discomfort issues of the old home. These considerations ensured long-term efficiency and comfort while reducing reliance on grid power. In addition, selecting building materials and structural elements that would enhance safety against fire was imperative not only because of the homeowner's past but also due to the high-elevation mountainous and forested environment.

6. Secure Funding, Rebates, Incentives, and Cost-Saving Programs

CORE incentives and Holy Cross Energy programs made battery storage and electrification financially achievable. This step required: consulting with experts, completing assessments, providing documentation, and aligning purchases and installations with program requirements. The Power+FLEX program at Holy Cross Energy provides homeowners with upfront rebates and a monthly bill credit for a solar battery storage system in exchange for sharing stored energy with Holy Cross' energy grid during times of peak electricity demand. Homeowners can choose how much of their battery system they want to enroll in the program for a 5-year period.

7. Build and Install Systems with Continuous Problem-Solving Along the Way

During construction, codes, site conditions, and budget surprises created new challenges (e.g., detention ponds, equipment choices, coordination between trades). The solution was an ongoing feedback loop of revisiting options, adjusting designs, balancing cost with performance, resolving questions with CORE, Holy Cross Energy, and technical experts and being committed to adjusting when it is best for the project goals of efficiency and livability. Because the home is still brand new, this process will likely continue as Coerdt and Sartain experience living in their new house during all four seasons.

Lessons Learned

1. Community Support Boosts What is Possible

The owners credit the Valley's outpouring of help from fundraisers to housing with giving them the stability and commitment to stay and rebuild. Community was a key factor in their decision to move forward in a way that honors their past and their future.

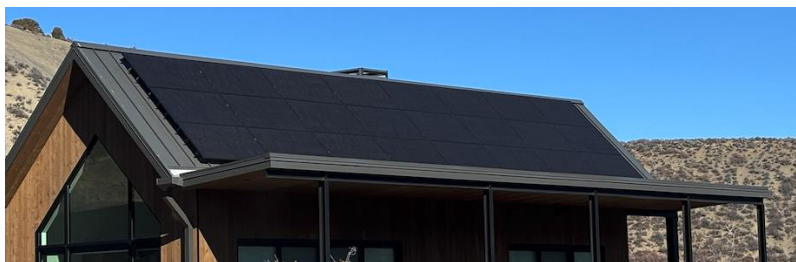
2. Contact CORE Early—Before Design Begins

Due to a proactive conversation with Coerdt initiated by Tim Johns of CORE, the homeowners were made aware of grant funding and were offered guidance that moved their project toward greater sustainability. Coerdt said, "Tim reached out and really got the ball rolling. I wish I had reached out earlier before we even started building just to get some of the ideas CORE has to offer. Our builders pushed us in the right direction, but Tim's explanation of the grant funds was the most helpful."

The \$15,000 in incentives, the owners realized their project would have benefitted even more if they had reached out before construction started. Early consultation can shape system choices, roof design, mechanical selections, and long-term planning.

3. Site Matters

By relocating slightly uphill and away from the drainage where cold air pooled, the new site gains significantly more winter sun and maintains better natural warmth. This small shift solved many of the previous home's comfort issues and enabled better solar performance. Attention to airflow, drainage, and sun path is essential.



Pitched south facing roof with 24 solar panels

4. Simple, Solar-Ready Roof Design Pays Off

Designing a clean, south-facing roof surface maximized the solar array potential. This deliberate design choice allowed the home to produce far more of its own energy and paired seamlessly with battery storage.

5. Seek Partnerships with Local Utility Providers

Holy Cross's Power+FLEX program made it possible to get battery storage essentially upfront and interest-free. CORE's coordination with Holy Cross made the process understandable and affordable. Without this partnership, the system would have been financially out of reach. Looking for opportunities with energy suppliers can benefit the homeowners and the grid and it is beneficial to ask questions and be curious about what might exist out there to financially and technically support efficiency projects.

“CORE was definitely the cause for us being able to afford some of the efficient systems in our home. It's definitely worth reaching out to them first before you even talk to a builder.”

– Clint Coerd, homeowner

6. Improve Comfort through Technology and Building Techniques

The home's new heat pump warms the home faster and more evenly than the old pellet stove and baseboards. Instead of hot-cold pockets and having to wait hours for their previous house to reach 68 degrees, the new home now maintains steady, even temperatures and can warm up within 15 minutes. The new system performs efficiently and quickly.

In addition, taking the time during construction to make sure the framing gets sealed correctly, that caulking is tight and consistent. Small efforts during building can reinforce making a tightly sealed home, from design to finishing touches on the structure.

7. All-Electric Is Feasible—and Wise—for Mountain Living

With solar, batteries, and heat pumps, the owners anticipate monthly bills around \$100—far lower than the temporary power bills on the property while building that were \$700–\$900, albeit those included the power used during construction. All-

electric systems are safer, cleaner and future-ready, as well as less expensive over the long run.

8. Grants and Rebates Make a Meaningful Difference

The \$15,000 in CORE incentives helped offset a quarter-million-dollar investment in electric systems. While small relative to total cost, grants arrive after big expenses and fill critical financial gaps.

9. Cooking Electrically Is a Major Lifestyle Upgrade

Induction cooking, while a small part of the whole system, became one of the standout features—providing speed, efficiency, safety, and precision. It's a straightforward entry point for homeowners considering electrification.

10. Go Bigger and Seek Support from Organizations with Cooperative Goals

Coerdt said if he learned one thing from the project's completion it is "go bigger." He said, "If you have the chance, get a bigger solar array. I would love to have doubled the size." In addition, finding synergy between organizations that offer rebates moved the project forward with ease. He said, "What I really liked was how CORE and Holy Cross worked together. The battery system was supposed to cost us between \$30,000 and \$40,000 with for a lot of budgets is a no go. With them working together helped make it affordable."

Results of Process

The design and build process led to the successful creation of a resilient, high-performing, all-electric home that not only replaces what was lost but dramatically improves on it. By evaluating the site conditions, clarifying goals, and integrating solar panels, battery storage, and heat pumps into the design from the beginning, the homeowners now have a home that is comfortable, low-carbon, and sustainable. The new build corrects the flaws of the previous home—no more cold-air pooling, poor insulation, uneven heat, or dependence on pellet stoves and baseboards. Instead, the house maintains steady, even temperatures and recovers heat quickly, even in the winter.

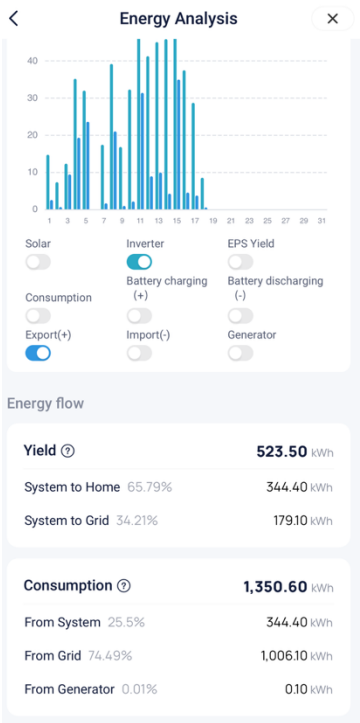
Based on the first month of use, the solar panels are producing 65.8% of the home’s energy, greatly reducing reliance on the grid. In addition, through the Power+FLEX program with Holy Cross, the batteries have contributed 34.2% of kWh produced back into the grid, offering the community clean, zero emission generated power.

The shift to a fully electric system—supported by a solar array, modern heat pumps, and the Holy Cross Power+ battery program—has significantly reduced monthly heating and energy costs. CORE’s rebates and Holy Cross Energy’s program made battery storage possible, ensuring that the home is protected from outages and capable of storing its own clean power.

Beyond the technical outcomes, the process strengthened the homeowners’ connection to their community and created a renewed sense of stability after immense loss. The careful design of the house with warmer site placement, simple solar-ready rooflines, and efficient mechanical systems turned a catastrophic event into an opportunity to build a healthier, safer, more future-focused home. The result is not only a physical rebuild, but the creation of a home that is restorative, environmentally responsible, and financially resilient.

Graphs & Tables

Sample energy output from December 2025.



Concluding Statements

This project illustrates how intentional design, community partnership, and modern electric technologies can transform the rebuilding process into an opportunity for long-term resilience. This story is also about more than construction. It's about recovery and resilience and the impact of a community that cares.

It leveraged compassion and support as well as technical expertise and high-performance building strategies. Clint Coerdt and Kate Sartain created a home that is more efficient, more comfortable, and better adapted to future challenges both climate-based and environmentally based.

The success of this project shows that with early planning, cross-disciplinary collaboration, and supportive incentive structures, homeowners can achieve meaningful reductions in energy use and carbon emissions without compromising comfort. The lessons learned here offer valuable guidance to builders, designers, utilities, and policymakers working to advance resilient housing across the region.

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- Mitzi Rapkin, Owner, Full Light Communications

Sources

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- Interview with Al Beyer
- Holy Cross Energy Power+FLEX [webpage](#)
- Project data from Green Electrical Solutions
- Source documents from CORE



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