

## colorado affordable housing Espero Apartments Case Study | Durango, Colorado



### Project data

Project Location	Durango, CO
Climate Zone	5
Housing Tax Credit	Federal 9 percent Housing Tax Credits
Placed in Service	2021
Project Size (sf)	27,801 sf
Floors (#)	3
Units (#)	40 (all one-bedroom apartments)
Buildings (#)	1
Construction Type	New
Fuel Type	Mixed fuel
Total Development Cost	\$10,052,873 (2021)
Operational Cost	\$6,542 Per Unit Per Annum (2022)



### Overview

Espero Apartments, a collaboration between BlueLine Development and Housing Solutions for the Southwest, was developed to support individuals and families in Durango experiencing homelessness. Following several years of engaging the community to address concerns and dispel myths surrounding **Supportive Housing** for those transitioning out of homelessness, BlueLine and Housing Solutions obtained a low-cost, long-term land lease from the City of Durango. The property is situated as part of the city's social services campus, near downtown Durango. Construction of Espero Apartments began in late 2020 and the building was placed into service in 2021. All 40 units within the building offer Supportive Housing for individuals and families who have previously experienced homelessness and live with a disabling condition.

**To learn more, visit:**

[swhousingsolutions.com/our-programs/espero-apartments/](https://swhousingsolutions.com/our-programs/espero-apartments/)

## Electrification strategies and features



### Water Heating

Central gas domestic hot water



### Space Heating & Cooling

Individual packaged terminal heat pumps



### Ventilation

Exhaust-only ventilation



### Cooking

Electric resistance stoves

## Planning and design approach

Espero Apartments are first and foremost Supportive Housing, an aspect that shaped all decision-making in the planning and design process. Shopworks Architecture provided experience with **trauma-informed design**, a component of high-quality Supportive Housing. A design challenge with this project was that the site is adjacent to an electrical distribution substation, which is not aesthetically desirable. Overcoming this challenge involved designing a site plan and building that provided a dignified living environment.

BlueLine noted that their Supportive Housing projects may have tight budgets for both first costs and operating costs. Opting for all mechanical systems at Espero Apartments to be powered by electricity rather than fossil fuels was cost-prohibitive regarding first costs, particularly given Durango's rural location. Another key consideration was the lack of availability of experienced installers and maintenance technicians for electric HVAC and domestic hot water equipment, which was also influenced by the rural setting. BlueLine encountered difficulties finding local installers with the necessary expertise for a project of this scale. As a result, the subcontractor base was geographically dispersed, leading to increased pricing pressures. These factors collectively led to the decision to pursue a mixed-fuel building.

These challenges do not, however, negate the advantages of building electrification. Residents and operators of Espero Apartments enjoy benefits, such as fewer indoor air pollutants than are associated with fossil fuel combustion, from several electric building systems. To learn more about how beneficial electrification addresses health, see RMI's **Decarbonizing Homes report**.

BlueLine had several reasons for choosing a central domestic hot water system fueled by methane gas for Espero Apartments. Many stakeholders agree that for central systems in multifamily buildings, designing, installing, and maintaining electric domestic hot water systems is a challenge. While solutions have been successfully implemented, the tight budget for the first costs of this project in addition to the challenges in finding qualified installers lent to the decision to install a gas-fired system. Additionally, the conventional all-electric design for domestic hot water involves individual, in-unit systems. In designing Espero, a primary objective was to maximize floor space in each unit, making the addition of a mechanical closet for water heaters counterproductive. Moreover, the mental and emotional well-being of residents played a significant role in this decision, as reducing the amount of equipment in each unit also minimizes maintenance personnel's intrusion into residents' homes. Considering these factors, a central gas system addressed the requirements of this Supportive Housing project. *To learn about **electric water heaters**, visit the **technical roadmap**.*



Space heating and cooling at Espero Apartments is provided by packaged terminal heat pumps (PTHPs). This system type utilizes electricity rather than fossil fuels, which reduces overall emissions and contributes to a healthier living environment. PTHPs can operate efficiently when not used as a ventilation air source, when they are well-sealed, and when they can operate a high percentage of their use in heat pump mode. With proper installation, this system is ideal for keeping the labor and equipment costs associated with space heating and cooling low. *To learn more about [electric space heating and cooling](#), visit the [technical roadmap](#).*

Espero Apartments employs exhaust-only ventilation, by which negative pressure created by an exhaust fan in the kitchen or bathroom draws fresh outdoor air into each unit. These systems offer a cost-effective installation and maintenance alternative compared to other ventilation methods. *To learn more about [ventilation](#), visit the [technical roadmap](#).*



## Financing and cost

The total development cost (TDC) for Espero Apartments was \$10,052,873. Because this project's construction occurred during the early stages of the COVID-19 pandemic, supply chain disruptions and labor shortages may have contributed to a higher TDC than the project would otherwise have incurred.

BlueLine reports that the per unit per annum cost for Espero Apartments is approximately \$6,542 (2022). This cost is lower than the Colorado state average of \$7,629 but higher than the La Plata County average of \$5,896 ([CHFA Per Unit Per Annum \(PUPA\) Reporting](#)). For further insights into operating costs in both all-electric and mixed-fuel multifamily affordable housing in Colorado, see the [Housing Tax Credit Building Electrification Report](#) (2021), prepared by Group14 Engineering for Colorado Housing and Finance Authority (CHFA), the Colorado Department of Local Affairs (DOLA), and the Colorado Energy Office (CEO).

Important financing components for the development of Espero Apartments were secured through cooperation with the City of Durango. Obtaining a low-cost land lease was a pivotal factor that enabled the projects development. Furthermore, the partnership in the development with Housing Solutions for the Southwest and their nonprofit status led to a sales tax exemption on the construction contract, resulting in savings amounting to six figures. As a result of these strategic financial decisions, BlueLine was able to forgo the use of permanent debt in the development of Espero Apartments, affording the opportunity to direct monthly cash flow toward supportive services for residents.

## Successes

Espero Apartments has been a much-needed addition to the Durango community and have provided a critical resource for Supportive Housing. Residents admire the views of Durango and enjoy the privacy of the fenced-in outdoor space. The spacious and thoughtfully-designed units have also received positive reviews. In addition, the common spaces host a variety of well-received events, both formal and informal, fostering a strong sense of community.





### Lessons learned

Over the two years in which Espero Apartments has been in service, BlueLine has experienced challenges with the specific model of PTHP used in this project. For instance, BlueLine has noted that these PTHP units require more frequent cleaning than their in-house maintenance team can manage; given both labor constraints and budget considerations, it is not feasible to engage external contractors for routine cleaning. In addition to the challenges with regular cleaning, many of the PTHPs installed at Espero Apartments have had component failures; the rural location of the development makes it difficult to obtain replacement parts quickly. In response, BlueLine has acquired additional PTHP units to keep in stock in order to replace units needing repair. In retrospect, BlueLine has said that more careful evaluation of the model they were considering and close collaboration with experienced consultants in the field during the selection process could have improved this outcome.

Espero Apartments is solar-ready, a design feature which enables solar panels to be installed at a future point in time without needing investment in any other property upgrades. However, securing the necessary funding and financing to implement a sufficient solar system that can offset operational costs has proven to be a challenge. BlueLine, however, remains enthusiastic about incorporating solar solutions. With the passage of the 2022 Inflation Reduction Act, nonprofits are now eligible for IRS direct pay on Section 48 Solar Investment Tax Credits. This legislation creates new opportunities for solar installations in properties like Espero Apartments. *To learn more about [renewables](#) and [associated financial resources](#), visit the [technical roadmap](#).*

A member of the Espero design team offered valuable advice to developers interested in pursuing building electrification: Make the decision early. Time spent drawing up multiple system designs can erode a project’s budget and timeline. By making the decision to go all-electric early, developers can realize cost savings during the design phase, providing additional funds for equipment and installation.

### Project team

Developer	Housing Solutions for the Southwest; BlueLine Development
Architect	Shopworks
General Contractor	FCI Constructors
Structural	IMEG Engineers
Civil	Short Elliott Hendrickson Inc.
MEP (Mechanical, Electrical, and Plumbing)	Able Consulting Group, MV Consulting, Inc., MEC Inc.
Energy	Group14 Engineering

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