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Feature

# Continuing the Green Tradition in the Lone Star State

2020 DOE Home Innovation Award Winner 'Coleman' by Ferrier Custom Homes provides a whole new level of home performance with emphasis on energy savings, comfort, health and durability

By Heather Ferrier Laminack

In a state with a "bigger is better" mindset, Texas green builder Ferrier Custom Homes is out to redefine that standard with their high-performance homes. Representing 4 generations of builders (our founder - my great-grandfather - immigrated from Scotland as a stone mason for the state capitol building in exchange for free land),





In the early 1980's when clients requested earth-sheltered homes for their low energy consumption, owner Don Ferrier got to work digging into the science behind their performance, and never stopped learning. Although their homes may look different today, they are still rooted in those same building science philosophies, distinguishing Ferrier as a specialist in energy-efficient, sustainable homes. **Third-party certifications** have proven to be an essential part of our process over the years, as both a quality control tool and for the reliability they bring coming from an independent verifier.

The Coleman project, a truly custom home, is an extension of that philosophy with its curated balance of sustainable design, performance and healthy indoor environment. Located on an infill lot in a small but booming community in North Texas, the home was designed in order to take full advantage of passive solar considerations, as well as to maximize the private rear yard. The design is a twist on Mid-Century Modern style and compliments the adjacent context of 1950's traditional homes.

## INTENTIONAL DESIGN

Maximizing indoor/outdoor spaces was achieved through a large, covered rear porch that acts as a breezeway, which boasts an outdoor kitchen and is directly accessible from the living room and master suite. Large sliding glass doors, protected from any direct sunlight, visually expand the living space.

The home's envelope was created with Structural Insulated Panels (SIP) (R-24 6.5" roof and R-17 4.5" walls), with all AC ducts located within for optimal efficiency, and which helped achieve 1.3 ACH50. A series of large, low-sloping roof planes provide maximum flexibility for placement of the 30 panels of the 8.85kW solar array, as well as create sculpted interior volumes for visual interest throughout the home. The white standing seam Class IV metal roof reflects sunlight in order to minimize heat gain, which is critical amidst our unrelenting hot Texas summers.

The lot dimensions ran north and south, which place the long axis of the home facing east and west. Obviously, this created a challenge as



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tree to the west provided generous shading for the majority of the west house roof, but also prohibited installation of the PV array on that location. Given that there was very little south facing roof that was not heavily shaded, it limited where the solar panels could be installed. The only remaining feasible option was to have it installed on the east facing roof- an excellent choice given that there was no roof shading and the standing seam metal roof provided an excellent attachment base.

## GO WITH THE FLOW

The porch acts as a natural breezeway, allowing maximum air flow through the home during the cooler seasons. The sliding glass doors create a low-pressure area that naturally draws air into the house and out the north windows on both lower and upper levels. Properly located double hung, awning and casement windows were specified throughout the home in order to optimize natural air flow, and to decrease the need for air conditioning in milder months.

## BREATHING EASIER

Energy efficiency combines with elements that promote healthy indoor air quality in the home- which is especially important for the homeowner, who has asthma. All low or no-VOC paints, stains and adhesives were used, as well as non-toxic pest control, formaldehyde-free cabinets, and a steam shower was installed in the master shower to help with respiratory circulation. Balanced ventilation was achieved with a controlled central fan with fresh air intake and timered exhaust. "The zero-energy ready home has given me a superior home-owning experience. Being an asthmatic, the various air sealing measures offer dual benefits of having tightened the house to improve air quality while reducing costs. Due to energy conservation, quality construction and innovative technologies, I can rest easy knowing I have made the right choice", he [homeowner] says.

## SMART HOME

Control 4 wiring installed throughout the home allows for Wi-Fi connected smart (LED) lighting, which allows the homeowner to



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homeowner connects his car to when parked in the garage.

## RESILIENT

To safeguard the home from Texas' storm season, Fortified Home high wind, tornado, hail and wildfire details were incorporated. These included installed Simpson Strong-Tie foundation anchor straps with pull out strength oof 5400lbs on corners of the home & mid-span locations (as well as at the detached garage and edges of garage door openings). This protocol is incorporated into all of our new homes, as an extremely low-cost preventative measure.

## DISTINGUISHED HONORS

Ferrier Custom Homes is proud to share that the Coleman project is a 2020 DOE Home Innovation Award Winner- a program created to honor forward-thinking builders whose homes represent the very best in innovation on the path to zero energy ready homes. The award embodies the ethos of the DOE Zero Energy Ready Home Program, which represents a whole new level of home performance with emphasis on energy savings, comfort, health and durability.

## PROJECT INFO

Project Name: Coleman

Project Location: Westworth Village, Texas

Architect: Daniel Kunschik

Builder: Ferrier Custom Homes

Interior Designer: Fort Design Studio

Certified By: Fox Energy Specialists

Type of Product: Custom Home Zero Energy Home (ZERH)

2,938sf living space

3 bedrooms, 2 baths, 2 floors

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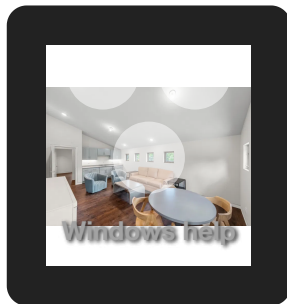
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- Green Certifications: DOE Zero Energy Ready, ENERGY STAR, Indoor AirPLUS
- Resiliency: Fortified Home high wind, tornado, hail and wildfire details incorporated
- Universal Design: First floor complies with Universal Design requirements, which include all interior doors 2-8 or 3-0 and curbless showers
- HERS Index Score: 2
- Photovoltaics: 30 panel, 8.85kW solar array
- Electric vehicle charging port: YES
- ENERGY STAR appliances: YES
- Air Source Heat Pump with programmable thermostat, all ducts located within conditioned space
- SIP walls (4.5") & roof (6.5")
- Tankless gas water heater
- WaterSense high-efficiency plumbing fixtures
- Landscaping: Xeriscaping, smart irrigation with rain sensor
- LED Lighting
- Low/no VOC paint & finishes: YES



*Heather Laminack is the General Manager for Ferrier Custom Homes, current President of the Greater Fort Worth Builders Association, chair of the NAHB Young Professional Committee and 2<sup>nd</sup> Vice Chair of the NAHB Sustainability & Green Building Subcommittee.*

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