


RESIDENTIAL PROJECT PROFILE

# Sturgeon/Allen Container Home

 Fort Worth, Texas



## Comfort, Contained.

Homeowners Ron Sturgeon and Linda Allen are known for thinking outside the box in every aspect of their lives. "If it's different, let's try it," said Ms. Allen. "That's our attitude about most things in life."

Sturgeon and Allen are avid world travelers, and their home and business projects are often inspired by art, architecture and design from across the globe. In 2018, Sturgeon built the Box Office Warehouse Suites (BOWS), an office, warehouse and retail park in Fort Worth, Texas, made from 154 shipping containers. Inspired by the BOWS property's unique look and high performance, Sturgeon and Allen decided to build a custom home in the Linwood neighborhood of Fort Worth that would be eye-catching and energy-efficient.



## Ahead of the Expected with LG HVAC Solutions



## Project Highlights

The 5,500 square-foot, three-story home was constructed using six 45-foot shipping containers welded to a steel-centered superstructure. Sturgeon and Allen also have a guest home at the back of the main property, made from two 45-foot shipping containers. The primary residence, which includes a nine-car drive-through garage on the first floor, a third-floor swimming pool, and a rooftop running track and entertaining space, is industrial and sleek. Large expanses of glass break up the metal façade, allowing natural light to enter the home, which features large, open rooms and a 20-foot high ceiling in the main living area. The kitchen features a range of built-in high-end appliances from Signature Kitchen Suite, LG's luxury line that Allen described as "fabulous."



Because of the home's open rooms, sizable glass windows, high ceilings, and location, keeping spaces cool during the hot Texas summers and warm during the cold winter months was critical. So, Sturgeon, who has used more than 400 duct-free systems from LG Electronics USA's Air Conditioning Technologies division on several other projects, including the other shipping container development, reached out to Fort Worth-based AC Supply to design an LG HVAC system for the house.

**Ron likes to explore the unconventional, and with this house, he built it in a way that others haven't thought to explore. It's one of the best parts of working with him.**

*— James Fulton, Sales Director, AC Supply Co.*

As a result, AC Supply designed a system consisting of 16 LG Art Cool™ Mirror wall units with Smart Inverter Outdoor units. LG's Vertical Air Handling Unit (VAHU) with exposed ductwork was used to condition the open-plan second floor. AC Supply, working with Garrett Davis, project supervisor and owner of Davis Commercial Services, contacted JD Webb at Webb Air Heating & Cooling to manage the HVAC installation.

## Challenges

In addition to wanting a comfortable, energy-efficient home, Sturgeon and Allen had a specific aesthetic in mind for the interior and exterior of their home. Allen, who designed the interior, wanted an “industrial [look] with a funky side to it” to allow them to showcase the unique art they had collected over their years of world travel.

“My number one goal was to make sure the house was comfortable and then configure the HVAC in the most aesthetically pleasing way. And to do all of that in a way that was the most accessible for us to service after the installation,” said JD Webb, president of Webb Air Heating & Cooling. “Using the LG HVAC products opens all kinds of doors.”

To ensure the HVAC systems worked with the overall design intent, the team had to address piping visibility.

“One of the largest challenges with all the ceilings was figuring out how the HVAC system would run throughout the house and how we would get it to each floor.”

*-Garrett Davis, owner of Davis Commercial Services.*

Additionally, Sturgeon and Allen did not want any penetrations on the roof to avoid water damage should a leak occur. Sturgeon commented, “Roof penetrations are the bane of my existence, so I was determined to remove that possibility on this house.”

Therefore, the team needed to develop a solution for running the mini-split duct-free systems’ piping without penetrating the roof or interfering with plumbing and lighting.





## Solution

Sturgeon and Allen's home has a total of 21 Tons of conditioning. Ranging from 9,000 to 22,000 Btu/h capacities, the duct-free Art Cool Mirror units used in the interior of the home feature a sleek, mirrored finish, quiet operation and energy-efficient inverter technology. Thanks to ductless application, they allow Sturgeon and Allen to heat and cool individual spaces to their preferred comfort levels with natural airflow and auto operation modes. LG duct-free systems are designed for easier and more efficient installation, and most indoor units can mount on virtually any wall. Moreover, flexible piping lengths allow for extra flexibility in installation and design.

Also installed in the home was the LVN360HV Vertical Air Handling Unit, a multi-position air handler that can achieve 36,000 BTU cooling or 40,000 BTU heating, with exposed spiral ductwork. Because LG systems are considerably quieter than traditional HVAC systems, the noise comfort offered by the Vertical Air Handling Unit allowed the team to find a creative space for the unit, hiding it behind the pantry with its own access door.

Because of the number of units, the team from Webb Air Heating & Cooling, consisting of two lead technicians and a support member, began mapping the home system by system. Webb noted, "The overall project required insulated copper piping, with almost all the pipes exposed, so the team worked on tucking them in and running them around corners. And with an LG heat pump system, you don't have to worry about flu vents going through the roof, which gives you even more flexibility."

The LG duct-free systems allow flexibility when it comes to pipe length. Davis said, "Using the LG mini split systems helped since we just ran the line set in, which gave us more versatility to go from first to the second floor."



## Result

Utilizing the high-performing LG HVAC systems throughout the house has provided Sturgeon and Allen the comfort, energy efficiency, and visual appeal they have come to know and appreciate.

“We liked the LG [HVAC systems] because everywhere we’ve used them, they’ve lowered our utility bills. They’re very energy efficient.”  
 — Sturgeon

“Plus, we didn’t really want the air conditioning to show or be discernible. The way the indoor units are mounted throughout the house is pretty discreet. Most people come through the house and don’t even think about air conditioning, they just know that the house is comfortable. I’m convinced we could have never received those results with traditional systems.”  
 — Sturgeon

### LG HVAC Products:

#### Indoor Units



Vertical Air Handling Unit with exposed ductwork



Art Cool™ Mirror duct-free wall systems

#### Outdoor Units



Multi F Multi Zone



Smart Inverter Single Zone

### Project Team:

**Ron Sturgeon**, Homeowner, Designer, President  
 RDS Investment & Ron Sturgeon Real Estate LP

**Linda Allen**, Homeowner, Designer  
 State Farm Agency Owner

**Garrett Davis**, Owner  
 Davis Commercial Services

**Dan Thomas**, Builder & Owner  
 Dan Thomas Homes, Inc.

**Ken Schaumburg**, President  
 Schaumburg Architects

**JD Webb**, President  
 Webb Air Heating & Cooling

**Randy Boyd**, President  
 AC Supply Co.