



Delivering L.B. Foster innovation



CASE STUDY

CONCRETE PRODUCTS

Envirocast[®] Wall System

Habitat for Humanity of Tennessee



“Envirocast gave us the ability to build these two homes faster, within budget, with significantly less volunteer hours, without sacrificing quality.” - David Cowan, Director of Construction, Habitat of Cleveland, TN

Habitat for Humanity is a global nonprofit organization that provides quality, affordable housing for families in need.

The organization operates in over 70 countries around the globe. In the United States, the organization is present in all 50 states. Specifically, Habitat for Humanity of Tennessee is a coalition comprised of 37 independent Habitat affiliates that serve local communities statewide.

Situation

As a result of the COVID-19 pandemic, the amount of people volunteering to assist in the construction of homes with Habitat for Humanity of Tennessee decreased substantially. The lack of volunteers has caused the process of homebuilding to slow significantly. Habitat asked CXT® Inc., a subsidiary of L.B. Foster, to provide an Envirocast® wall solution for two single story, 950 square foot, two-bedroom homes to be built for clients in Cleveland, Tennessee. The Envirocast walls would be in lieu of conventional wood framed walls that require significant volunteer resources and coordination on site to construct concrete footings, walls, place installation, and to complete finishes.

Requirement

L.B. Foster's subsidiary, CXT® Inc., manufactures the Envirocast® Wall System in Tennessee and Florida. Envirocast combines the benefits of concrete with the speed of prefabrication to offer the most advanced wall solution available.

Envirocast walls are factory-cast with integral insulation and metal studs to provide walls that are paint ready on the exterior, and electrical and drywall ready on the interior. Habitat for Humanity of Tennessee was looking for ways to simplify and expedite their home builds to reduce reliance on volunteer staff.

Specification

Envirocast® 9'-3 5/8" tall above-grade residential walls, including:

- > Concrete: High-strength, fiber & steel-reinforced, provides the paint-ready exterior shell.
- > Insulation: EPS insulation is integrally cast against concrete to provide a finished wall with R=24.75 cavities.
- > Studs: metal studs are cast in and provide electrical & drywall ready interior finish.
- > Exterior finish: One of the houses has a batten strip finish and the other house has smooth textured walls with brick stamp finish for the bottom 24"
- > Turnkey: Delivery and installation included for ultimate quality and dependability.

Solution

CXT manufactured 130 Lineal Feet of 9'-3 5/8" tall Envirocast walls for each home that will provide approximate 9' tall finished ceiling heights. In early March of 2024, Habitat completed preparation on both home sites in accordance with Envirocast guidelines which included compacted stone footings in lieu of poured concrete. On March 19, 2024, CXT delivered and installed the walls for both homes which are situated across the street from each other in Cleveland TN. Immediately prior to setting the walls, the CXT install team completed final grading & compaction of the gravel foundation at the wall lines for each site and then proceeded to install the walls using a mobile crane. Installation for each of the two homesites was completed in about four hours.

Within days of the installation of Envirocast walls, the interior floor slabs of both homes were poured, and the exterior of the walls were painted. Next steps included installation of roof trusses and roofing which then provided a covered home where interior work could quickly commence.

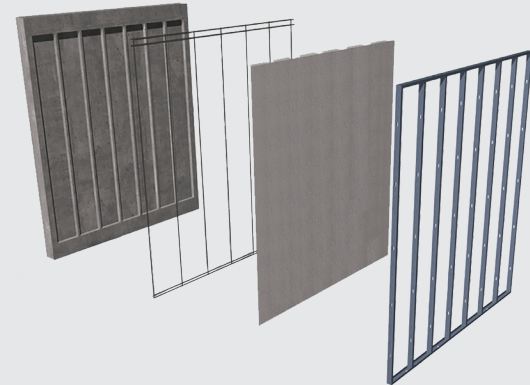
Results

Habitat estimated the elimination of the poured concrete footings, along with rapid installation of the prefabricated Envirocast walls, saved four to six months in their schedule, and allowed them to complete two additional homes in 2024. In addition, Habitat is expecting the higher R-value Envirocast walls will yield a better HERS Index and significant lifecycle energy reductions for both new homeowners.

The Envirocast solution provided major benefits to the Habitat organization:

- > Utilizing the factory prefabricated Envirocast product eliminated many exterior-wall build steps on-site providing an opportunity for Habitat to expedite the build process.
- > Valuable volunteer hours that would have been needed for exterior wall construction, insulation, and stud framing, were re-allocated for simple exterior painting of the walls, and for interior finish work.
- > Factory insulated panels provide a better performing thermal product for their customers, as well as eliminate issues with termites due to the wood-free exterior stud walls.

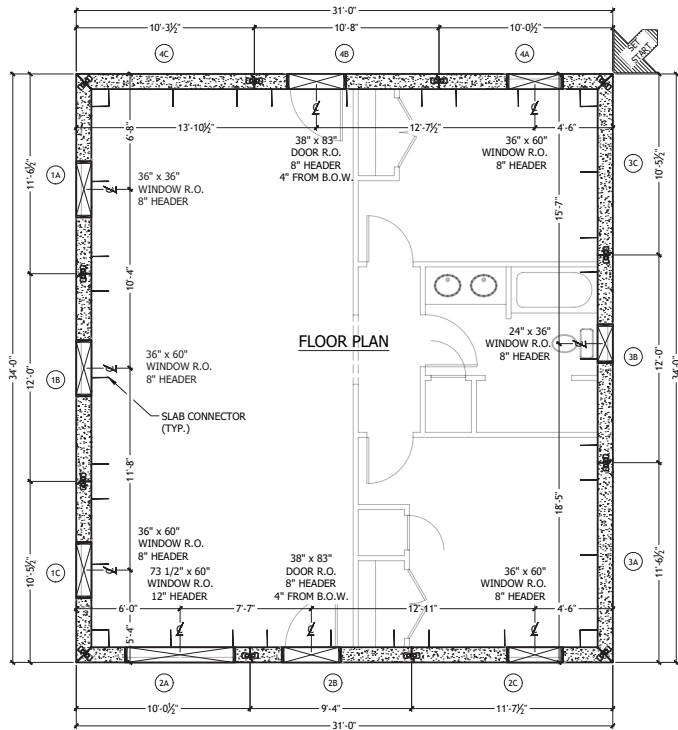
The two Habitat houses are expected to be completed in the fall of 2024 with residents anticipated to move in during January 2025.



What they said

“What being a Habitat homeowner means to me is: a new meaning in life, a new start, a new beginning.”

Flor - a Habitat Homeowner



PLAN - WALL LAYOUT 1
E01
SCALE: 3/16" = 1'-0"

