

NGBS GREEN CASE STUDY

E2 Homes

The New American Remodel 2021



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About the Project

Project Type: Single-Family New Construction

Home Size: 5,474 sq ft

Location: Winter Park, FL

Performance: NGBS Green Certification, Emerald Level (Jan. 2021)

Additional Badges Earned:

NGBS Green+ NET ZERO ENERGY & WELLNESS

Website: [The New American Remodel](#)



Project Team:

Architect/Builder: E2 Homes

Interior Design: CRT Studios, Inc.

Landscape Architect: Evergreen Consulting, LLC

Verifiers: [Drew Smith](#) & [Josh Kane](#), Two Trails, Inc.

Sponsored Products: [Various, coordinated via NAHB Suppliers' Council](#)

About E2 Homes

E2 Homes is a modern, forward-thinking custom builder. The award-winning firm has a diverse team that specializes in distinguished residential and commercial construction, remodeling, and green building. The firm's work has been featured in *TechHome Builder*, *Orlando Home & Garden*, *Fine Homebuilding*, *Winter Park Magazine*, and *Dwell*.

Overview

The New American Remodel (TNAR) 2021 is among the first single-family homes to achieve NGBS Green Certification under the 2020 version of the National Green Building Standard (NGBS). It was also among the first to earn the NGBS Green+ NET ZERO ENERGY and WELLNESS badges.

Originally built in 1973, this home draws lineage from famed architect Frank Lloyd Wright. Through the renovation project, the team sought to address structural challenges and improve efficiency, while maintaining the home's structural integrity, enhancing the lake views, and opening up the floor plan.



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ENERGY

At the start of the project, the home was performing poorly in its energy use, with a HERS Index value of 147 — 47% less efficient than the average new code-built home. Post-renovation, the home has an enhanced building envelope and a rooftop solar array, enabling it to generate more energy than it is designed to use.

Features like low-flow plumbing fixtures, on-demand hot water recirculation, and drought-tolerant landscaping support water conservation, as well as reduce energy use for water heating.

The home also includes many features that support health and well-being. It is located near many local Orlando amenities, making it well situated for walkability.



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+WELLNESS

NGBS Green Features/ Practices

Energy Efficiency & Renewable Energy:

- With 13 kilowatt photovoltaic solar array, home is designed to produce more energy than it consumes
- Tight building envelope (constructed using [AeroBarrier](#)) boosts air leakage at 2.47 ACH; minimizes incoming contaminant and supports energy efficiency
- Exterior masonry walls are insulated using reflective open-cell wall insulation
- Windows with low-e coating limit solar heat gain and optimizes air tightness
- Efficient ground-source heat pump
- 100% LED lighting

Water Efficiency:

- Achieved a 58% reduction in water usage through the installation of high efficiency plumbing fixtures

Health & Wellness:

- Walkable community near resources, retail, and restaurants reduces auto dependence and carbon emissions
- Low-VOC and other low-emission finishes
- Whole-building mechanical ventilation with capability to maintain relative humidity

Why is an NGBS Green Certified home a better place to call home?

“An NGBS Green Certified Home offers numerous advantages for homeowners, including energy savings, improved air quality, durability, etc... but my favorite is definitely the independent and rigorous testing procedures required to achieve certification. E2 Homes is proud to participate and certify its homes through the NGBS Green program.”

– Rob Smith, Owner, E2 Homes

The Verifier Voice

“Having been the sustainability consultant and green verifier for The New American Remodel projects for many years, I appreciate how showcase homes like this provide an opportunity for all trades within the building process to see and experience the many different cutting-edge products and green building techniques available today. This annual project, in particular, exemplifies how important it is for a renovation home to be tested and certified, and what a profound difference it can make to the home’s efficiency. Building green does not need to be more difficult or extremely costly. Finding what makes sense for you and your clients is the best way to deliver a high-performance certified project.”

– Drew Smith, NGBS Green MASTER Verifier, Two Trails, Inc.

