

2018 RESNET Builder Challenge ~ U.S. Custom Builder Category



Josh & Anna Thoma Residence, 7605 Saddle Drive, Papillion, NE

Rating Score: HERS 26

Builder: Tom Reding, Reding Homes, Papillion, NE

HERS Rater: Leon Komar, Lifetime Home Services, Omaha, NE

Overview:

This project was a team effort involving the Builder, the Homeowner/Designer and HERS Rater (providing consulting & QA inspection services). Although Reding is a well seasoned Builder, this was his first HERS and Energy Star rated new home but he quickly adopted the additional Air Barrier and Sealing techniques required. Several preliminary inspections were done including a Blower Door with IR scans after Spray Foam applications on exterior walls and ceiling-- the Builder was quick to identify air leakage areas, visualize contributing framing issues and directed corrective measures. No doubt these actions contributed to a remarkable first-time Blower Door score of 0.51 ACH50.

This project was funded through Construction and Final Mortgage loans underwritten by the Nebraska Energy Office (NEO) energy-efficient new home program. This program set may high-efficiency guidelines; but the Homeowner, Josh Thoma, researched and provided most of the insulation, window and HVAC specifications that far exceeded the minimum guidelines. The end result was a HERS 26 rating which is also the lowest NEO loan HERS score to date per Bruce Hauschild, Energy Technical Advisor.

Building Features:

Style: 5,751 sq. ft. 4 BR / Custom 2 Story w/ Walkout Basement

Foundation Walls: R-20 ext. Foam Board

Above Grade Walls: 2x4 to 2x12 (based on structural specs) with R-20 ext. Foam Board;
cavity insulation: 2" Closed Cell foam & Blown-In Fiberglass fill.

Ceiling Insulation: 2" Closed Cell foam (corner-to corner) & Blown Fiberglass to R60

Windows: U-Value: 0.17 ~ SHGC: 021 (typical)

Mechanical: ClimateMaster Trilogy geothermal HVAC w/ integrated Domestic Hot Water & ERV.

Annual Energy Costs: \$1,791 (per HERS certificate) ~ \$1,875 (2018 Rates)