

LEED®

Leadership in Energy & Environmental Design

Residential Pre-Occupancy Case Study

40%

LEED homes average savings in energy use and cost compared to conventional homes.

Acknowledgements

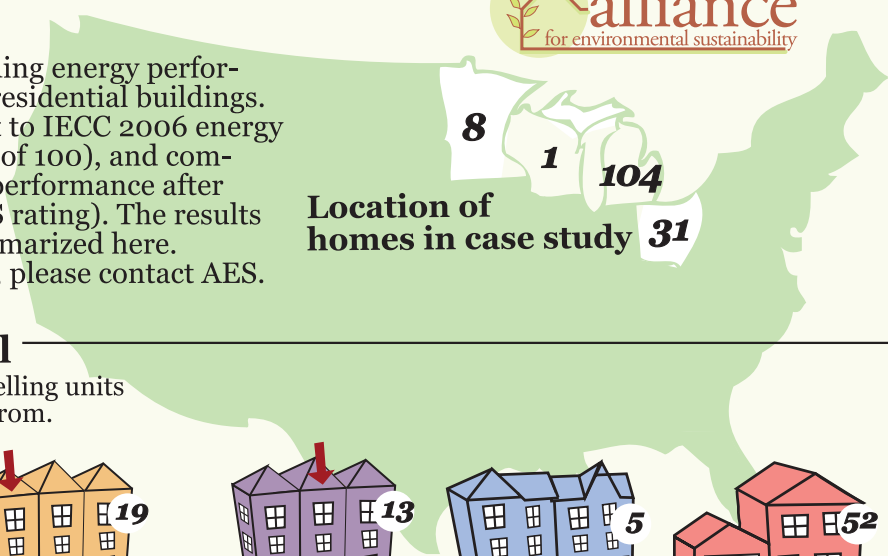
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Research Methodology

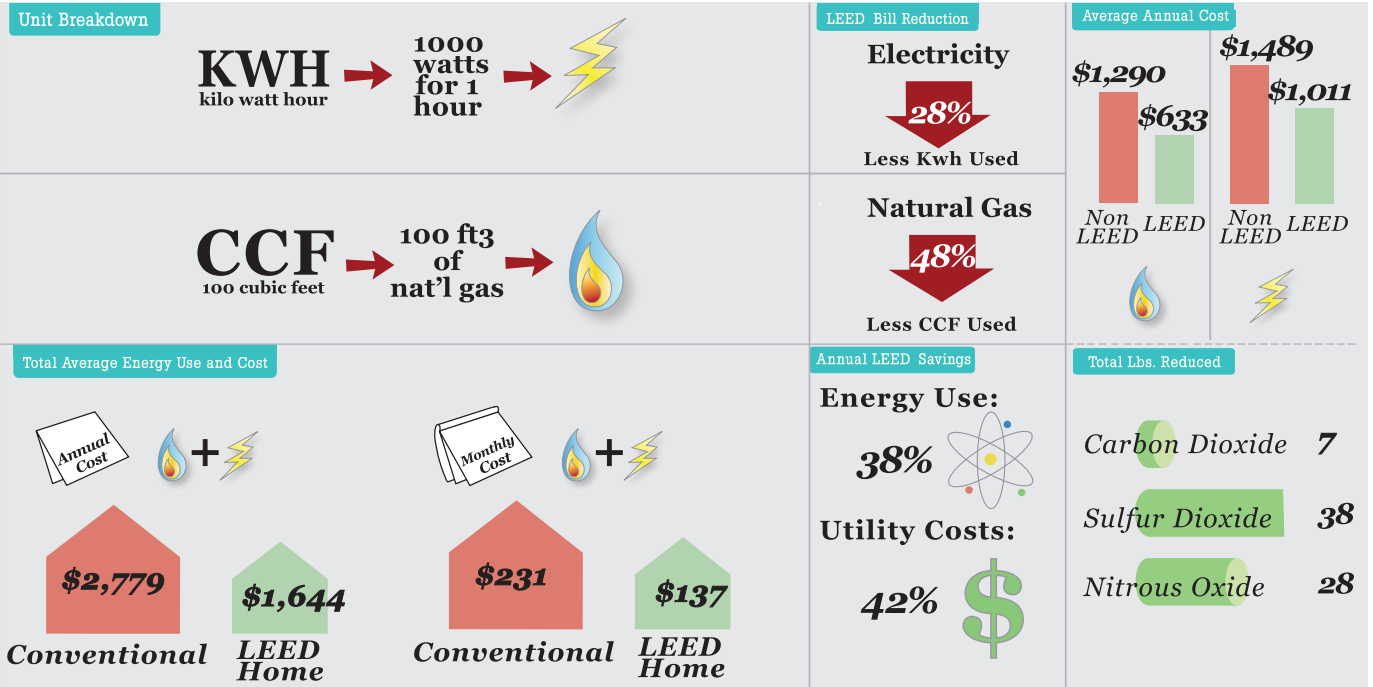
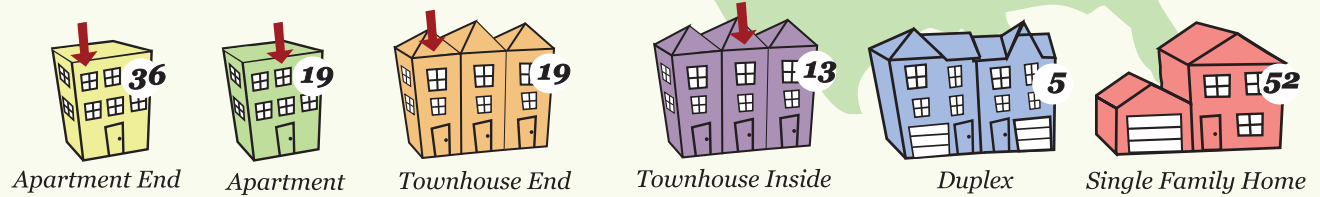
AES collected pre-occupancy building energy performance data on its LEED certified residential buildings. Each home was modeled as if built to IECC 2006 energy code (with a modeled HERS score of 100), and compared to the home's actual tested performance after construction (based on final HERS rating). The results were then aggregated and are summarized here. For a detailed analysis and results, please contact AES.



Location of homes in case study

144 Homes Total

LEED -certified dwelling units used to draw data from.



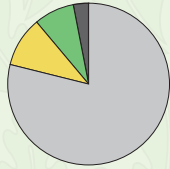
AES is the Midwest's premier LEED for Homes provider.
Contact: Info@AllianceES.org **Web:** www.AllianceES.org

LEED Breakdown

LEED Certification

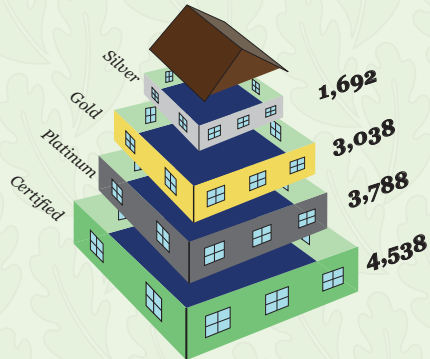
Number of houses per category in case study

PLATINUM	4 (3%)
GOLD	14 (10%)
SILVER	114 (79%)
CERTIFIED	12 (8%)



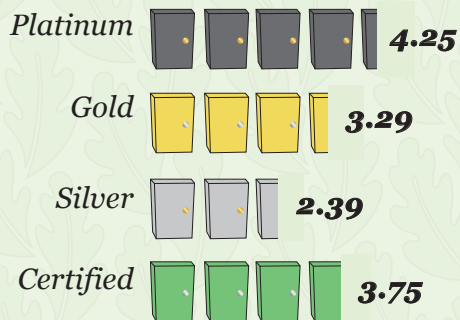
Average SQ. Footage

33 of the homes in the study (23%) were built by Habitat for Humanity affiliates and were smaller Silver homes.



Average Bedrooms

Each home's potential occupancy determined by number of bedrooms plus 1 (assuming two people in master bedroom).



ANNUAL SAVINGS

		PLATINUM	GOLD	SILVER	CERTIFIED
Total Energy	Reduced %	41	46	29	29
	Savings %	46	42	24	24
KWH	Reduced %	31	47	23	10
	Savings %	39	47	22	9
CCF	Reduced %	51	44	34	50
	Savings %	52	36	25	50
Emissions Reduced	CO2 (tons)	10	10	3.4	7
	Nitrogen Oxide (lbs)	42	80	20	31
	Sulfur Oxide (lbs)	28	62	10	20
Monthly Utilities	Conventional \$	345	193	91	293
	LEED Home \$	189	107	70	198
	Monthly Savings	\$156	\$86	\$21	\$95
Annual Utilities	Conventional \$	4,135	2,310	1,092	3,520
	LEED Home \$	2,266	1,284	836	2,381
	Annual Savings	\$1,869	\$1,026	\$256	\$1,139
Utility Costs over 30 yrs (assuming 3% annual inflation)	Conventional \$	196,725	109,900	51,952	167,465
	LEED Home \$	107,806	61,087	39,773	113,277
	30-year Savings	\$88,919	\$48,813	\$12,179	\$54,188

Based on this analysis and factoring in home size, aiming for a LEED Gold rating achieves the highest energy efficiency savings.

Additionally, LEED Homes at each level reduce total cost of ownership, saving tens of thousands of dollars through utility savings, during a typical 30-year mortgage period. Given the average \$2,500 certification cost for a single-family LEED home through AES, owners will typically have a payback period under 2.5 years.