

Certificate No. H-272198

Certified Date: April 02, 2025



HIGH-PERFORMING HOME CERTIFICATION

Silver

**3832 PRESERVE DR NE,
BELMONT, MI 49306**

This home has met Pearl's nationally recognized performance standards for whole-house energy efficiency.

Casey Murphy

W. Casey Murphy
Senior VP of Quality and Standards

pearlcertification.com

Congratulations on your certification! This home is a special property type. It has energy efficient, high-performing home features that are third-party certified by Pearl Certification. Pearl Certification is an ENERGY STAR Partner, and works in collaboration with the U.S. Department of Energy, the Appraisal Institute, and the National Association of Realtors.

A high-performing home is a system. Each feature (also referred to as an asset) has a unique role, but they must all perform together to keep the home feeling good and running smoothly. The right features work together in the right ways to provide superior comfort, indoor air quality, and energy efficiency compared to traditionally built homes.

The enclosed Certification Report provides a detailed look at the high-performing features in this home. The report includes:

- An overview of the high-performing features in this home
- Technical specifications for each feature
- An easy to understand translation of technical features into the benefits to the homeowner
- Appraisal Institute Green and Energy Efficient Addendum

We also recognize that achieving high home performance is a journey, not a destination. That's why we stay connected with homeowners on our free, award-winning app to provide homeowners with the tools, resources, and education they need to continue their home improvement journey.



W. Casey Murphy
Senior VP of Quality and Standards
Pearl Certification

Pearl proudly works in partnership with





Pearl Home Certification Report



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Home Address
**3832 Preserve Dr NE,
Belmont, MI 49306**



3832 Preserve Dr NE,
Belmont, MI 49306

Certified on April 02, 2025
Pearl Silver Certificate | Pearl Score: 809

Pearl Score

809

Your Home's Pearl Performance

This page shows how Pearl assesses your home's high-performing assets. Your Pearl score captures how well your home is doing in terms of energy efficiency, comfort, health, resilience, and home value. The higher the score, the higher your home's performance.



Building Shell

216/322 Points

Assets that provide air, moisture, and a thermal barrier for the home.



Home Management

177/300 Points

Smart devices and energy-use dashboards.



Heating & Cooling

307/382 Points

This equipment heats and cools air, water, or steam, then circulates it through the home.



Baseload

109/196 Points

Devices that run year-round, not just in the heating or cooling season.



Solar, EV & Energy Storage

0/200 Points

Includes rooftop solar systems, batteries that store energy, and electric vehicle charging stations.



Badges

A badge affirms that a home excels in a particular area such as sourcing solar energy or operating solely on electricity.



Solar



Electrified Home



Certification Level

The certification tier reflects the home's performance level. The more categories in which a home excels, the higher the certification tier it earns.



Continue Your Journey

Find out how to increase your Pearl Score and Certification Tier — even earn badges using Pearl app.

Learn more





Special Performance Features of Your Home



Attic Insulation:

Top 10% of MI homes

This home's attic is very well-insulated, which means lower utility bills and greater comfort - particularly in rooms located directly under the attic. Good attic insulation also protects against excessive heat loss in winter that can cause roof damage from snow melt.



Wall Insulation:

Top 5% of MI homes

At least some of this home's wall insulation is outstanding and better than most homes. It will be more energy efficient and quieter as a result. The additional insulation acts as a sound as well as a temperature barrier.



Gas Furnace:

Top 28% of gas heated homes

This home's heating equipment is very efficient. It saves the homeowner money during cold winter months while providing comfort. The furnace also has a safer venting system, preventing dangerous combustion gases from entering into living spaces.



Forced Air Ducts:

In conditioned space

This home's ductwork is inside conditioned space - a big benefit for the lifetime of its systems. Installing ductwork in unconditioned space is bad building practice, as it not only wastes energy but also makes an expensive heating and cooling equipment work harder to cool the home - causing it to fail sooner.



Water Heater:

High Efficiency

Water heating accounts for about 18% of a home's energy use. This home has a very efficient water heater, offering significant savings. The water heater also has a safer venting system, preventing dangerous combustion gases from entering into living spaces.



Refrigerator:

Very efficient

ENERGY STAR certified refrigerators are about 9-10 percent more energy efficient than models that meet the federal minimum energy efficiency standard.



Special Performance Features of Your Home



Dishwasher: Very efficient

ENERGY STAR certified dishwashers use advanced technology to get your dishes clean while using less water and energy. Dishwashers that have earned the ENERGY STAR are, on average, about 5 percent more energy efficient and 15 percent more water efficient than standard models.



Clothes Washer: Very efficient

ENERGY STAR certified clothes washers use about 25 percent less energy and 40 percent less water than regular washers.



LED Lighting: Very efficient lighting

More than half of this home's lights are LED bulbs, which not only use less energy, but also produce better light along the color spectrum, are dimmable, and last a very long time.



Room Ventilation: Lower indoor humidity

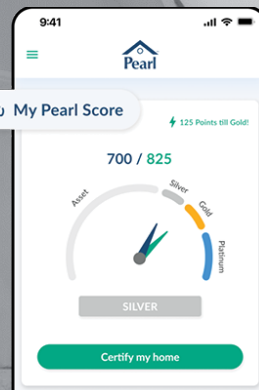
All of this home's full bathrooms have vented exhaust fans. This reduces the risk of mold and mildew, and provides better humidity control and healthier indoor air quality.



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Continue Your Home Performance Journey in Pearl's App for Homeowners



Access Your
Certification Package



Save on New
Upgrades



Level-up Your
Certification

Update Your Home Profile

- Easily add other home features to your home profile.
- Understand what your existing home assets can do.
- Track progress towards a higher performing home.
- Find rebates, tax credits, and other discounts to help defray cost.

Take care of all this and more in
Pearl app.



Get the Mobile App



Get Ready to Sell Your Home

- Add other high-performing home features to your home's profile and generate an updated Pearl Certification.
- Share with your real estate agent.
- Don't have an agent? Connect with a **Pearl Real Estate Network** member who can market your high-performing home for maximum resale value.



Sign Up on the Web

Set up account

OR



Home Technical Specifications

Note: remember to show the following pages to your home appraiser.

The following pages highlight:

- Special performance features of your home
- Details about your high-performing home assets
- Everything that you can certify with Pearl
- Science and industry standards behind Pearl's certification



What do I do with these tech specs?

Scan QR code with your phone camera to find out.



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HOME ASSET DETAILS

Building Shell

My Pearl Score:

809



Attic and Roof

✓ Last updated: April 2, 2025



R-Value

R-49

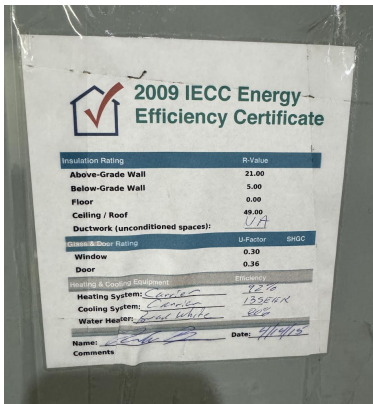
Insulation Type (predominant)

Fiberglass - Loose Fill



Wall Insulation

✓ Last updated: April 2, 2025



R-Value

R-21



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HOME ASSET DETAILS

Building Shell

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Windows and Skylights

✓ Last updated: April 2, 2025

Type

Window

Framing

Aluminum with Thermal Break

U-Factor

0.3

Glazing type

Clear

Panes

Double-pane



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HOME ASSET DETAILS

Heating And Cooling

My Pearl Score:

809



Heating System

✓ Last updated: March 25, 2025

Type

Gas central furnace

Model Number

59SC5A060S141210

AFUE

95.5

AHRI Certified Reference Number

5039400

Manufacturer

Carrier



Distribution System

✓ Last updated: March 25, 2025

Type

Forced Air System

Location

100% Within Conditioned Space

Add an image.

If you are the homeowner, login to [Pearl app](#) and submit a picture of this asset.





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HOME ASSET DETAILS

Baseload

My Pearl Score:

809



Water Heating

✓ Last updated: March 25, 2025

Fuel

Gas

Water Heater Type

Conventional Water Heater

Tank Size

Less or equal to 55 gallons

Manufacturer

BRADFORD WHITE

Energy Factor

0.63

Model Number

M1TW40S6FBN



Refrigerator

✓ Last updated: March 25, 2025

ENERGY STAR®

Yes

Model Number

GFE26GSHCSS

Manufacturer

GE



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HOME ASSET DETAILS

Baseload

My Pearl Score:

809



Ventilation

✓ Last updated: March 25, 2025



Ventilation Type

Bathroom

Bathroom Ventilation Type

Fan only



Clothes Washer

✓ Last updated: March 25, 2025



ENERGY STAR®

Yes

Model Number

GTWS8350H1WS

Manufacturer

GE



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HOME ASSET DETAILS

Baseload

My Pearl Score:

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Dishwasher

✓ Last updated: March 25, 2025

ENERGY STAR®

Yes

Model Number

GDT580SSF4SS

Manufacturer

GE



Lighting

✓ Last updated: March 25, 2025



Prevalence of LEDs

100%



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HOME ASSET DETAILS

Baseload

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Healthy Air

✓ Last updated: March 25, 2025



**Dedicated ventilation in every
full bathroom**

Yes



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HOME ASSET DETAILS

Home Management

My Pearl Score:

809



Smart Home Devices

✓ Last updated: March 25, 2025



Thermostat
programmable



Planning

✓ Last updated: March 25, 2025

Green Door Account

Yes

Add an image.

If you are the homeowner, login to [Pearl app](#) and submit a picture of this asset.





What Can I Certify with Pearl?

Pearl can certify all the assets listed below; plus our certification system is always evolving and adding new certifiable categories.

Building Shell



Attic/Roof
Insulation



Wall Insulation



Rim Joist



Floors &
Foundation



Windows



Doors



Air Sealing

Baseload



Ventilation



Water Heating
System



Clothes Dryer



Clothes
Washer



Dishwasher



Refrigerator



Lighting



Pool
Equipment



Cooking
Appliances



Kitchen
Fixture



Indoor Air
Quality



Fireplace



Bathroom
Fixture

Heating & Cooling



Cooling



Heating



Heat Pump



Distribution
Systems

Home Management



Smart Home
Devices



Planning

Solar, Batteries, and Electric Vehicle Readiness

Pearl Points are not yet awarded for these assets.



Solar
Photovoltaic



Solar Inverter



EV Ready
Home



Home
Batteries



Solar
Installation



Power
Production
Warranty



Solar
Incentives



About Pearl

Your home is your biggest investment. Pearl helps you earn a higher return on that investment.

Pearl's mission is to give homeowners the tools to improve their homes' health, comfort, efficiency, resilience, and value. Pearl's nationally recognized certification captures the value that high-performing and energy-efficient assets like heat pumps, insulation, and ENERGY STAR® windows can add to your home's resale value. It then translates that value into language that homebuyers, lenders, and appraisers can understand. In doing so, we're building a market that rewards energy efficiency.



Sell Your Home for More

Not only do high-performing homes cost less to operate, but high-performing homes with [Pearl can also earn a premium of up to 5% on average](#) when marketed properly.



Continue Your Home Performance Journey

Whether you're focused on comfort, health, savings, or home equity, Pearl's free, award-winning Pearl app has tools to help you get there. Access your Pearl Report and see how your high-performing home upgrade has impacted home value. Have additional high performing home features which aren't captured in your Certification Report? Use Pearl app to add your home's features — HVAC, insulation, and more — to your profile. Watch your Pearl Points accumulate and order your certification when you're ready to sell or refinance.



Names You Recognize

Founded in building science, Pearl is the only national sponsor of the U.S. Department of Energy's Home Performance with ENERGY STAR® program and partners with the National Association of REALTORS® Green Resource Council.

Pearl proudly works in partnership with





Appendix A: Appraisal Institute's Green and Energy Efficiency Appraisal Addendum

Instructions to homeowner or listing agent:

High-performance features can add significant value to a home. Pearl Certified homes sell for 5.5% more on average when properly marketed, according to independent appraiser studies.

A home may be appraised for different reasons:

- Mortgage refinance
- To discontinue mortgage insurance - if the home's value has increased enough, the homeowner may have sufficient equity in the home to no longer need insurance
- Immediately prior to selling a home to assist in pricing the home
- As part of the home sale process to meet the buyer's lending requirements

Pearl Certification has an AI REPORTS® License Agreement with the Appraisal Institute.

The following appendix can be provided to an appraiser to assist him or her in valuing the home. As stated in the Addendum:

"The objective of this Addendum is to standardize the communication of the high performing features of residential properties. Identifying the features not found on the 1004 form provides a basis for comparable selection and analysis of the features. Builders, contractors, homeowners, and third party verifiers are encouraged to complete this Addendum and present to appraisers, agents, lenders, and homeowners."

The Appraisal Institute makes no representations, warranties or guarantees as to, and assumes no responsibility for, the data, analysis or work product provided by the individual appraiser(s) or any other individual in the specific contents of the AI Reports®

Client:	Brett Vredevoogd	Client File #:	
Subject Property:	3832 Preserve Dr NE, Belmont, MI 49306-8505	Appraisal File #:	

EFFICIENCY FEATURES (Water, Energy, and Environmental. See types defined in glossary).							
The following items are considered within the appraisal analysis of the subject property:							
Insulation	<input checked="" type="checkbox"/> Fiberglass Blown-In <input type="checkbox"/> Foam Insulation <input type="checkbox"/> Cellulose <input type="checkbox"/> Fiberglass Batt Insulation <input checked="" type="checkbox"/> R-Value Wall R-21 Ceiling R-49 <input type="checkbox"/> Other						
Building Envelope	Envelope Tightness: Unit: <input type="checkbox"/> CFM25 <input type="checkbox"/> CFM50 <input type="checkbox"/> ACH50 <input type="checkbox"/> ACH natural Instructions: Insert the rating as a number that could be 0.5 to 7ACH50 or higher. The lower the number, the more air tight the envelope. Building Codes for area show maximum Envelope Tightness allowed based on the climate zone. Not all areas have adopted a building code. http://bcap-energy.org/						
Windows	<input type="checkbox"/> ENERGY STAR®	<input type="checkbox"/> Low E	<input type="checkbox"/> High Impact	<input type="checkbox"/> Storm	<input checked="" type="checkbox"/> Double Pane <input type="checkbox"/> Triple Pane	<input type="checkbox"/> Tinted	<input type="checkbox"/> Solar Shades
Day Lighting	<input type="checkbox"/> # of Skylights:		<input type="checkbox"/> # of Solar Tubes:		<input type="checkbox"/> Other (Describe): % of Lighting LEDs: 100		
ENERGY STAR® Appliances	ENERGY STAR®:: <input checked="" type="checkbox"/> Dishwasher <input checked="" type="checkbox"/> Refrigerator <input checked="" type="checkbox"/> Washer/Dryer <input type="checkbox"/> Other Energy Source: <input type="checkbox"/> Propane <input type="checkbox"/> Electric <input type="checkbox"/> Natural Gas <input type="checkbox"/> Other (Describe): Note: ENERGY STAR® appliances do not result in an ENERGY STAR® Home.						
Water Heater	<input type="checkbox"/> ENERGY STAR®		Size: <=55 gallons <input type="checkbox"/> Tankless		<input type="checkbox"/> Solar (next page) <input type="checkbox"/> Heat Pump <input type="checkbox"/> Coil		
HVAC & Related Equipment Describe in comments area.	<input checked="" type="checkbox"/> High Efficiency HVAC SEER Efficiency Rating % AFUE* 95.5% *Annual Fuel-Utilization Efficiency		<input type="checkbox"/> Heat Pump Efficiency Rating: COP: HSPF: SEER: EER:		Thermostat/Controllers? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Programmable Thermostat? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Auxiliary Heat Source? <input type="checkbox"/> Yes <input type="checkbox"/> No Radiant Floor Heat? <input type="checkbox"/> Yes <input type="checkbox"/> No Geothermal? <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Vehicle Ready? (car charger) <input type="checkbox"/> Yes <input type="checkbox"/> No		
Indoor Environmental Quality	<input type="checkbox"/> Energy (ERV) or Heat Recovery Ventilator (HRV) <input type="checkbox"/> Other Measured Whole-House Ventilation Device (See glossary) <input type="checkbox"/> Humidity Monitoring Device installed				<input type="checkbox"/> Non Toxic Pest Control <input type="checkbox"/> Radon System: <input type="checkbox"/> Active <input type="checkbox"/> Passive		
Water Efficiency	<input type="checkbox"/> Reclaimed Water System (Describe): <input type="checkbox"/> Greywater reuse system <input type="checkbox"/> Water Saving Fixtures				<input type="checkbox"/> Rain Barrels Used in Irrigation <input type="checkbox"/> Cistern size: gallons <input type="checkbox"/> Location of cistern:		
Utility Costs	Annual Utility Cost: \$ /year, based on: to (full year). Includes (check all that apply): <input type="checkbox"/> Electric <input type="checkbox"/> Heating <input type="checkbox"/> Water <input type="checkbox"/> Other:					# Of Occupants:	
Comments Include source for information provided in this section.	The following property has a number of high-performing features as detailed in the Pearl Certification report. With the cooperation and approval of the Appraisal Institute, Pearl Certification has an AI REPORTS® License Agreement. The Appraisal Institute makes no representations, warranties or guarantees as to, and assumes no responsibility for, the data, analysis or work product provided by the individual appraiser(s) or any other individual in the specific contents of the AI Reports®						

Completed by: W. Casey Murphy	Title: Senior VP of Quality and Standards	Date: 04/02/2025
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The objective of this Addendum is to standardize the communication of the high performing features of residential properties. Identifying the features not found on the appraisal form provides a basis for comparable selection and analysis of the features. Builders, contractors, homeowners, and third party verifiers are encouraged to complete this Addendum and present to appraisers, agents, lenders, and homeowners. Complete the pages that apply to the property appraised and provide to appraiser prior to the completion of an appraisal. Provide the Addendum to the lender at the time of loan application to assist them in understanding the property type so an appraiser with sufficient knowledge of this property type will be engaged to provide an appraisal to meet secondary mortgage market guidelines.

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Client:	Brett Vredevoogd	Client File #:	
Subject Property:	3832 Preserve Dr NE, Belmont, MI 49306-8505	Appraisal File #:	

Solar Panels			
The following items are considered within the appraisal analysis of the subject property:			
Solar Photovoltaic (Electric) System			
Type of Ownership	Array #1	Array #2 (if applicable)	
	<input type="checkbox"/> Leased <input type="checkbox"/> Owned <input type="checkbox"/> *Solar Loan with UCC Filing <input type="checkbox"/> Purchase Power Agreement (PPA)	<input type="checkbox"/> Leased <input type="checkbox"/> Owned <input type="checkbox"/> *Solar Loan with UCC Filing <input type="checkbox"/> Purchase Power Agreement (PPA)	
Panel Specifications	System Size: kW (1kW = 1000 Watts) Age of Panels: Energy Production: kWh Source of Energy Production Estimate: Manufacturer: Warranty on Panels: years	System Size: kW (1kW = 1000 Watts) Age of Panels: Energy Production: kWh Source of Energy Production Estimate: Manufacturer: Warranty on Panels: years	
Array Placement <small>Affects energy production. *Orientation</small>	Location (roof, ground, etc.): <input type="checkbox"/> Fixed Mount <input type="checkbox"/> Tracking Mount Tilt / Slope: *Azimuth:	Location (roof, ground, etc.): <input type="checkbox"/> Fixed Mount <input type="checkbox"/> Tracking Mount Tilt / Slope: *Azimuth: *Orientation (direction panels face):	
Inverter Specifications	Number of Inverters per Array: Age: Wattage: watts Manufacturer: Warranty Term: years	Number of Inverters per Array: Age: Wattage: watts Manufacturer: Warranty Term: years	
Energy Storing Batteries	Battery Type: <input type="checkbox"/> Lithium-ion <input type="checkbox"/> Lithium-ion Polymer <input type="checkbox"/> Lithium Iron Phosphate <input type="checkbox"/> Lead Acid <input type="checkbox"/> Lead Calcium <input type="checkbox"/> AGM <input type="checkbox"/> GEL Manufacturer: Storage Capacity: kWh Warranty Term: years Battery age:		
Name of Utility Company:		Charge / kWh from Utility	\$/ kWh
Solar Thermal Water Heating System			
Type of System:	Active: <input type="checkbox"/> Direct <input type="checkbox"/> Indirect Passive: <input type="checkbox"/> Integral collector <input type="checkbox"/> Thermo-syphon	Storage Tank Size	Gallons:
Collector Type:	<input type="checkbox"/> Flat-Plat <input type="checkbox"/> Integral <input type="checkbox"/> Evacuated-Tube Solar	System Age	Years:
Back-Up System:	<input type="checkbox"/> Conventional Water Heater <input type="checkbox"/> Tankless On Demand <input type="checkbox"/> Tankless Heat Pump	Warranty Term	
Solar Uniform Energy Factor (SUEF):	*Rating ranges 1 to 11. Higher number is more efficient.	Manufacturer	
Comments <small>Discuss incentives available for new panels, condition of current panels, and any maintenance issues. If leased, provide the lease terms.</small>	<p>Note: Leased solar PV systems and Power Purchase Agreements should not be included in the value of the real property as these systems generally are considered personal property. If a system is a lease or a PPA the terms must be provided to the appraiser for analysis. Appraisers must analyze the effect any of the terms of the lease or PPA have on the price buyers are willing to pay for the property.</p> <p>Note: Solar loan with UCC filing If the solar installation is funded by a loan that is secured by UCC filing, the loan must be paid off, or the appraiser must indicate a value for the solar panels that is conditional upon the removal of the UCC.</p>		

Completed by: W. Casey Murphy	Title: Senior VP of Quality and Standards	Date: 04/02/2025
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Location - Site			
The following items are considered within the appraisal analysis of the subject property:			
Walk Score	Score	Source: <input type="checkbox"/> http://www.walkscore.com <input type="checkbox"/> Other:	
Public Transportation	<input type="checkbox"/> Bus Distance: Blocks	<input type="checkbox"/> Train Distance: Blocks	<input type="checkbox"/> Subway Distance: Blocks
Site	Orientation (front faces): <input type="checkbox"/> East/West <input type="checkbox"/> North/South	Landscaping: <input type="checkbox"/> Water Efficient <input type="checkbox"/> Natural <input type="checkbox"/> Pond/Lake on site <input type="checkbox"/> Rain Garden	
Comments			

Incentives – Amount of Incentive and Terms	
The following items are considered within the appraised value of the subject property and based on effective date of value.	
Federal	
State	
Local	
Comments	Incentives offset cost and should be reported and described in the cost approach section of the report. Clearly identify the incentives that offset the gross cost of construction to meet appraisal standards. Incentives are typically not a sales concession in sales comparison approach since they do not transfer with the property and are not paid by the seller. Incentives are typically for a specified period and only those available as of the date of value should be addressed in the appraisal process. Incentives may be available to offset repairs or deferred maintenance items as well. Incentives, rebates, and tax credits for most U.S. properties can be found at www.dsireusa.org

Completed by: W. Casey Murphy	Title: Senior VP of Quality and Standards	Date: 04/02/2025
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The objective of this Addendum is to standardize the communication of the high performing features of residential properties. Identifying the features not found on the appraisal form provides a basis for comparable selection and analysis of the features.

- Builders, contractors, homeowners, and third party verifiers are encouraged to complete this Addendum and present to appraisers, agents, lenders, and homeowners. Appraisers typically do not have sufficient information to complete this addendum without builder, contractor, or third party verifier documentation.
- Attach this completed document to the MLS listing to provide sufficient detail on sales and listings to assist buyers, appraisers, and real estate agents in understanding the high performance features of the property.
- Complete the pages that apply to the property appraised and provide to appraiser prior to the completion of an appraisal.
- Provide the Addendum to the lender at the time of loan application to assist them in understanding the property type so an appraiser with sufficient knowledge of this property type will be engaged to provide an appraisal to meet secondary mortgage market guidelines.

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Client:	Brett Vredevoogd	Client File #:	
Subject Property:	3832 Preserve Dr NE, Belmont, MI 49306-8505	Appraisal File #:	

Residential Green and Energy Efficient Addendum

Additional Resources

Appraised Value and Energy Efficiency: Getting it Right. This document provides links to resources in understanding the secondary mortgage market guidelines on appraisals of energy efficient and green features. It addresses the following:

- What can builders do?
- For Buyers: Assuring a competent appraiser for your home
- For Lenders: A sample letter that should be completed and provided to the lender at the time of mortgage application alerts the lender to the special features that requires an appraiser with knowledge of the property type. https://www.appraisalinstitute.org/assets/1/29/AI-BCAP_Flyer.pdf

PV Value®. PV Value® is a discounted cash flow (Income Capitalization Approach) to valuing energy produced. The solar PV system inputs on this form are necessary to use this program. www.pvvalue.com

Residential Green Valuation Tools. A textbook resource for completing the AI Residential Green and Energy Efficient Addendum is available. It can be purchased at the following website: <http://www.appraisalinstitute.org/residential-green-valuation-tools/>

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Glossary

ASHRAE 700 / ICC National Green Building Standard (NGBS): An ANSI-approved residential green building standard developed by the National Association of Home Builders (NAHB) and the International Code Council (ICC). It is applicable to single and multifamily projects, renovations and additions and residential land development. To comply, all buildings must incorporate sustainable lot development techniques and address energy, water & material resource efficiency and indoor environmental quality. Also, all owners must be educated about building operation and maintenance. <https://www.nahb.org/en/research/nahb-priorities/green-building-remodeling-and-development/icc-700-national-green-building-standard.aspx>

Building Envelope: The building envelope is everything that separates the building's interior from the exterior. This includes the foundation, exterior walls, roof, doors and windows. The envelope rating should be compared to the local building code requirements for this rating to identify a structure that exceeds the building code.

Energy Recovery Ventilation System (ERV) or Heat Recovery Ventilators (HRV): These systems provide fresh air without wasting all the energy already used to heat the indoor air. By recovering sensible (heat) or latent (moisture) energy from the stale indoor air, they offer fresh air ventilation with reduced energy loss.

ENERGY STAR Certified New Homes: EPA's ENERGY STAR certified homes are independently verified to be at least 15 percent more efficient than code-built homes, and include additional energy efficiency measures that can deliver savings of up to 30 percent compared to standard new homes. More than just a collection of ENERGY STAR products, an ENERGY STAR certified home includes a comprehensive package of energy efficiency systems and features that work together to deliver better performance, including a High-Efficiency Heating & Cooling System, a Complete Thermal Enclosure System; a Water Protection System; and Efficient Lighting & Appliances. www.energystar.gov/newhomes

ENERGY STAR Products: Behind each blue label is a product, building, or home that is independently certified to use less energy and cause fewer of the emissions that contribute to climate change. Today, ENERGY STAR is the most widely recognized symbol for energy efficiency in the world. In order to earn the label, ENERGY STAR products must be third-party certified based on testing in EPA-recognized laboratories. In addition to up-front testing, a percentage of all ENERGY STAR products are subject to "off-the-shelf" verification testing each year. The goal of this testing is to ensure that changes or variations in the manufacturing process do not undermine a product's qualification with ENERGY STAR requirements. [https://www.energystar.gov/about/origins_mission](http://www.energystar.gov/about/origins_mission)

Geothermal: A geothermal heat pump uses the constant below ground temperature of soil or water to heat and cool your home. <http://energy.gov/energysaver/articles/geothermal-heat-pumps>

HERS Index: The Home Energy Rating System (HERS) Index is an industry standard by which a home's energy efficiency is measured. It's also the nationally recognized system for inspecting and calculating a home's energy performance. A qualified third party certifier assesses the house based on its physical characteristics. The energy estimates from this assessment may vary depending on the lifestyle of the occupants, increasing utility expenses, and changes in the maintenance or characteristics of the energy features. There are three rating types: sampling rating, projected rating, and confirmed rating. A Sampling Rating is an application of the Home Energy Rating process whereby fewer than 100% of a builder's new homes are randomly inspected and tested to evaluate compliance with a set of threshold specifications. A Projected Rating: A Rating Type that encompasses one individual dwelling or dwelling unit and is conducted in accordance with Section 5.1.4.3.1 through 5.1.4.3.5 of the ANSI/RESNET/ICC Standard 301. A Confirmed Rating is a rating type that encompasses one individual dwelling or dwelling unit and is conducted in accordance with Sections 5.1.4.1.1 through 5.1.4.1.3. More information: <http://www.resnet.us/hers-index>. The ANSI standard utilized in the HERS Index is posted at <https://codes.iccsafe.org/public/chapter/content/7324/>.

Home Energy Score (HES): The Home Energy Score, developed and managed by the U.S. Department of Energy (DOE), is a national system that allows homes to receive an energy rating, like the MPG rating available for cars. The Home Energy Score uses a 10-point scale to reflect how much energy a home is expected to use under standard operating conditions. The Home Energy Score uses a standard calculation method and considers the home's structure and envelope (walls, windows, foundation) and its heating, cooling, and hot water systems. Only Assessors who pass DOE's Simulation Training can provide the Home Energy Score. www.HomeEnergyScore.gov

Indoor airPLUS: EPA's Indoor airPLUS is a voluntary EPA label for new homes that integrate a set of construction practices and technologies to reduce indoor air pollutants and improve the indoor air quality in a new home beyond minimum code requirements. It is only available to homes that first meet ENERGY STAR® Certified Home requirements. <http://www.epa.gov/indoorairplus>

LEED: Leadership in Energy and Environmental Design is a green certification program created by the U.S. Green Building Council (USGBC). As an internationally recognized mark of excellence, LEED provides building owners and operators with a framework for identifying and implementing practical and measurable green building design, construction, operations and maintenance solutions. <http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1988>

Living Building Challenge: Created by the Living Future Institute, the Living Building Challenge is the world's most rigorous proven performance standard for buildings. People can use the regenerative design framework to create spaces that, like a flower, give more than they take. Living Building Challenge certification requires actual rather than modeled performance. Therefore, projects must be operational for at least twelve consecutive months prior to evaluation. <https://living-future.org/lbc/basics/>

Low E: "Low emissivity" indicates a coating is added to the glass surface. The coating allows visible light to pass through the glass while stopping radiant heat energy from entering the building by passing through the glass. Approximately 40% of the sun's harmful ultra violet rays are blocked and insulation enhanced. <https://energy.gov/energysaver/energy-efficient-windows>

NGBS Small Project Remodel: Run by the Home Innovation Research Labs, this program certifies whole house and small project remodels as energy efficient. Unlike the Whole-House Remodel, the Small Project certification is prescriptive. Chapter 12 of the National Green Building Standard includes a list of mandatory practices, related to materials use, sustainable products, energy efficiency, and indoor environmental quality. A Home Innovation Accredited NGBS Green Verifier gives a final inspection to verify Small Project certification. During inspection, the Verifier will ensure the applicable practices have been met. http://www.homeinnovation.com/services/certification/green_homes/remodeling_certification/remodel_home_certification_process

NGBS Whole Home Remodel: Run by the Home Innovation Research Labs, this program certifies whole house and small project remodels as energy efficient. Certification of a whole-building remodel requires demonstrating that there has been a minimum of a 15% reduction in energy consumption and at least a 20% reduction in water consumption over the pre-remodel condition. There are some mandatory practices that must be met. A minimum number of points must be obtained from practices related to Lot Design, Resource Efficiency, Indoor Environmental Quality, and Homeowner Education. http://www.homeinnovation.com/services/certification/green_homes/remodeling_certification/remodel_home_certification_process

Passivhaus Standard: German standard for low energy homes that began in the 1980s. Passivhaus is a rigorous, voluntary standard for energy efficiency in a building, reducing its ecological footprint. It results in ultra-low energy buildings that require little energy for space heating or cooling. The Passive House Institute (PHI) is an independent research institute that has played an especially crucial role in the development of the Passive House concept - the only internationally recognized, performance-based energy standard in construction. <http://passiv.de/en/>

Passive House Institute US (PHIUS): Buildings designed and built to the PHIUS+ 2015 Passive Building Standard consume 86% less energy for heating and 46% less energy for cooling (depending on climate zone and building type) when compared to a code-compliant building. PHIUS+ 2015 is the first and only passive building standard based upon climate-specific comfort and performance criteria aimed at presenting a cost-optimized solution to achieving the most durable, resilient, and energy-efficient building possible for a specific location. <http://www.phius.org/home-page>

Passive Solar: Passive solar is technology for using sunlight to light and heat buildings with no circulating fluid or energy conversion system. <http://rredc.nrel.gov/solar/glossary>. A complete passive solar building design has the following five elements: (1) aperture (collector) (2) absorber (3) thermal mass (4) distribution (5) control. <http://www.nrel.gov/docs/fy01osti/27954.pdf>

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Rain Garden: A rain garden is a depressed area in the landscape that collects rain water from a roof, driveway or street and allows it to soak into the ground. Planted with grasses and flowering perennials, rain gardens can be a cost effective and beautiful way to reduce runoff from your property. Rain gardens can also help filter out pollutants in runoff and provide food and shelter for butterflies, songbirds and other wildlife. More complex rain gardens with drainage systems and amended soils are referred to as bio-retention. <https://www.epa.gov/soakuptherain/rain-gardens>

SEER: Seasonal energy efficiency ratio - The higher the SEER rating, the more energy efficient the equipment is. A higher SEER can result in lower energy costs. <https://energystar.zendesk.com/hc/en-us/articles/212111387-What-is-SEER-EER-HSPF->

Smart House: A smart house is a home that has highly advanced, automated systems to control and monitor any function of a house – lighting, temperature control, multi-media, security, window and door operations, air quality, or any other task of necessity or comfort performed by a home's resident. <http://architecture.about.com/od/buildyourhous1/g/smarthouse.htm>

Water Heaters: Types are described here: <http://energy.gov/energysaver/articles/solar-water-heaters>.

WaterSense: EPA released its Final Version 1.1 WaterSense New Home Specification. This specification will be effective January 1, 2013 and establishes the criteria for new homes labeled under the WaterSense program and is applicable to newly constructed single-family and multi-family homes. http://www.epa.gov/watersense/new_homes/homes_final.html

Whole Building Ventilation System: A whole building ventilation system assists in a controlled movement of air in tight envelope construction. Whole building ventilation equipment is often a part of the forced air heating or cooling systems. There are various methods of providing whole home ventilation including a heat recovery ventilator (HRV) or an energy recovery ventilator (ERV). Four primary types of systems here: <https://energy.gov/energysaver/whole-house-ventilation>

Zero Energy Ready Home (ZERH): To qualify as a DOE Zero Energy Ready Home, a home shall meet certain minimum requirements, be verified and field-tested in accordance with HERS Standards by an approved verifier, and meet all applicable codes. Builders may meet the requirements of either the Performance Path or the Prescriptive path to qualify a home. <http://energy.gov/eere/buildings/zero-energy-ready-home>

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