

Habitat for Humanity of Minnesota – Impact Fund

PROGRAM GUIDELINES – CONSTRUCTION

Impact Fund program guidelines require any funded home to meet Enterprise Green Communities Criteria (EGCC). Part of the EGCC is meeting the ENERGY STAR for Homes requirements. Part of ENERGY STAR for Homes is the Home Energy Rating System (HERS) Index. All three will forward be referred to collectively as Program Guidelines.

1. CONSTRUCTION SPECIFICATIONS. The attached *Project Spec Sheet.pdf* lists the baseline construction methods and/or materials necessary to meet Program Guidelines. Download *Green Communities Workbook IF#5.xls* available on the Impact Fund webpage [HERE](#), review Intended Methods tab; supply project information on lines 3-9 and signatory information on line 84.
2. CONSTRUCTION PROCESS. **You MUST work with a Home Energy Rating System (HERS) Rater.** This is the ONLY person able to provide you with HERS required documentation needed to meet Program Guidelines. HERS Raters serving Minnesota are listed below. The attached *HERS Rater Sample Contract.pdf* will outline the minimum activities and documentation required of a HERS Rater to satisfy Program Guidelines. **Contact the HERS Rater BEFORE CONSTRUCTION BEGINS to review your construction specs and schedule required site visits.**
3. ENERGY STAR DOCUMENTATION. Your HERS Rater must complete and/or obtain AND provide to you (the builder) all ENERGY STAR program checklists/reports as detailed in the attached *HERS Rater Sample Contract.pdf*. You will then need to submit ALL DOCUMENTS LISTED on the contract to Habitat Minnesota in order to meet Program Guidelines
4. ENERGY STAR PARTNERSHIP REGISTRATION. This is a free program; sign-up is a quick online process. Begin on the ENERGY STAR partner page [HERE](#).
5. HVAC SUBCONTRACTOR SHEET. The attached *HVAC Subcontractor Sheet.pdf* must be initialed and submitted to Habitat Minnesota in order to meet Program Guidelines.
6. CONSTRUCTION/PROPERTY FILE DOCUMENTS. Follow *IF Grant Checklist.docx* Impact Fund Additional Requirements section for Construction/Property File Documents, available [HERE](#).

AFFILIATE (Builder): _____

BUILD ADDRESS: _____

THE BUILDER has read and understands the above listed Program Guidelines. Initial: _____

Date: _____

HERS RATERS

XRG Concepts, Brandon Vagt, 507-258-6500 (Rochester, MN)

Red Door Energy Auditing, Alan Christenson, 320-250-9803 (Rockville, MN)

Jim Larson, 218-838-5501, jim.larson462@gmail.com (Brainerd, MN)

Molly Berg, 612-205-9472, mollysatwork@gmail.com (Minneapolis, MN)

Check www.resnet.us/directory/search for a current list of HERS Raters in Minnesota

Below are listed the basic construction methods and materials necessary to meet Program Guidelines. There are various ways to meet some listed specifications - work with your HERS Rater to explore options and ensure your plan meets Program Guidelines.

PLEASE NOTE THAT MOST OF THESE HAVE BEEN A PART OF HABITAT CONSTRUCTION FOR 10+ YEARS - YOU CAN DO THIS!

This list is a consolidation and summary of both the Green Communities Criteria and ENERGY STAR for Homes requirements. If you are interested in full details, visit the links provided at the end of the form.

COMPONENT SPECIFICATIONS

Component	Description / Minimum	Notes
Structure - Foundation	No requirement (basement/slab/etc)	
Structure - Walls	No requirement (wood frame/ICF/etc)	
Structure - Trusses	Heel height - 12" minimum for flat ceiling	
Windows - Type	No requirement (slider/casement/etc)	
Windows - U-Factor	U-0.27 (value displayed on window sticker)	
Water heater - Type	If gas-powered, must be power-vented	
Water heater - GAS Efficiency	30 gal = 0.63 EF 40 gal = 0.61 EF 50 gal = 0.59 60 gal = 0.57 EF 70 gal = 0.55 EF 80 gal = 0.53 EF	
Water heater - ELECTRIC Efficiency	30 gal = 0.94 EF 40 gal = 0.93 EF 50 gal = 0.92 EF 60 gal = 0.91 EF 70 gal = 0.90 EF 80 gal = 0.89 EF	
Heating system - Type	No requirement (forced air/boiler)	
Heating system - GAS Efficiency	FURNACE ≥ 95%, BOILER: ≥ 90%	
Heating system - Subcontractor qualifications	HVAC Subcontractor sheet signed	SEE Program Guidelines - Construction .pdf
Ventilation - Whole house - Type	Heat Recovery Ventilator OR Energy Recovery Ventilator	
Ventilation - Whole house - Ventilation rate	Total/continuous: Must meet MN Energy Code 1322	PER CODE
Ventilation - Bath - Type	Energy Star, dedicated to outside, tied to light AND controlled by either humidistat, timer, or similar	
Ventilation - Kitchen - Type	Dedicated to outside, NO EXCEPTIONS	
Ventilation - Dryer	Dryer vent MUST BE RIGID	
Insulation - Slab - R-value	R-10 to 4' (cz6) or 5' (cz7) for slabs ≤ 12" below grade; ADD R-5 perimeter for slabs with radiant heat	PER CODE
Insulation - Foundation - R-value	R-15 total; minimum R-10 exterior	PER CODE
Insulation - Foundation - Type	No requirement (foam board/icf/etc)	
Insulation - Wall - R-value	R-21	PER CODE
Insulation - Wall - Type	No requirement (fiberglass/foam board/etc)	
Insulation - Attic - R-value	R-49	PER CODE
Insulation - Attic - Type	No requirement (fiberglass/cellulose/etc)	

Plumbing - Fixtures - Type	1.28 GPF Toilet, 1.5 GPM Bath faucet, 2.0 GPM Kitchen faucet & showerhead	
Interior finish - Composite wood products	Formaldehyde free OR all edges sealed with low-VOC sealant	Laminated cabinets/countertops/shelving is considered sealed (if not hard wood).
Flooring - carpet	MUST BE "GREEN LABEL" CERTIFIED.	Most carpet manufacturers have a "Green Label" line of product.
Flooring - hard surface	LAMINATE/VINYL MUST BE "FLOORSORE" COMPLIANT; OR hardwood/reclaimed/tile	Most hard-surface flooring manufacturers have a "FLOORSORE" line of product.
Appliances - Refrigerator	ENERGY STAR®	The Whirlpool donation from Habitat for Humanity International complies with this requirement.
Appliances - Dishwasher	ENERGY STAR, if supplied	
Appliances - Clothes washer	ENERGY STAR, if supplied	
Lighting - Interior	Compact fluorescent OR LED bulbs in all fixtures	
Lighting - CEILING FANS	ENERGY STAR, if supplied	
Lighting - Exterior	Compact fluorescent OR LED bulbs in all fixtures AND Dark-Sky approved AND equipped with action sensor	Light fixture packaging will note if it is Dark-Sky approved.
Landscaping - Type	100% Native species plantings	ONLY IF landscaping is provided. Grass seed considered native.
*Compact Development - Net density	Total units / total buildable acreage: Must meet surrounding residential density	SEE <i>Green Communities Workbook.xls</i> , Density tab
**Construction Waste - Management plan	Maintain waste management plan; specify EITHER 50% diversion path OR 100% material-specific path	SEE <i>Green Communities Workbook.xls</i> , Construction Waste Management tab
***ENERGY STAR for Homes	ENERGY STAR Partner registration & complete all ENERGY STAR checklists	SEE <i>Program Guidelines - Construction .pdf</i>

VOLATILE ORGANIC COMPOUND SPECIFICATIONS	
Interior paints, primers, and coatings	Not to exceed, Grams/Liter
Flats	50
Nonflats	150
Adhesive/sealant	Not to exceed, gm/ltr
Indoor carpet adhesives	50
Carpet pad adhesives	50
Outdoor carpet adhesives	150
Wood flooring adhesive	100
Rubber floor adhesives	60
Subfloor adhesives	50
Ceramic tile adhesives	65
VCT and asphalt tile adhesives	50
Dry wall and panel adhesives	50
Cove base adhesives	50
Multipurpose construction	70
Structural glazing adhesives	100

ENTERPRISE GREEN COMMUNITIES CRITERIA : <https://www.enterprisecommunity.org/solutions-and-innovation/green-communities>

ENERGY STAR FOR HOMES PROGRAM: <https://www.energystar.gov>

Habitat for Humanity Home Energy Rating System Rater Contract

Habitat for Humanity Affiliate _____

Project Address _____

The above listed Habitat for Humanity Affiliate (Habitat) respectfully requests of the Home Energy Rating System Rating (Rater) a bid for all actions and reports pursuant to the following:

1. An ENERGY STAR v3.1 Home Verification Summary BASED ON PLANS
2. A Home Energy Rating Certificate AFTER PROJECT COMPLETION
3. The following ENERGY STAR Checklists/Reports as described and BY PROJECT COMPLETION:
 - a. HVAC Design Report – completed as necessary and provided to builder
 - b. HVAC Design Review Checklist – completed as necessary and provided to builder
 - c. Rater Field Checklist – completed as necessary and provided to builder
 - d. HVAC Commissioning Checklist (builder must initial on checklist as having received)
 - e. Water Management Checklist (builder must initial on checklist as having received)

PLEASE NOTE: This project has bid an ACCA and/or Advanced Energy credentialed HVAC contractor *if feasible*.

1. In the case a credentialed contractor **was attained**: ENERGY STAR certification will be pursued, and an ENERGY STAR for Homes Certificate required *in addition to* items as described in item #3 above.
2. In the case a credentialed contractor **was NOT attained**: All site visits, testing, and checklists/reports required of ENERGY STAR certification will be completed and provided to builder as described in item #3 above.

The Rater is welcome to provide a proprietary contract, as long as all conditions of this Home Energy Rater System Contract are fulfilled.

Thank you for working with Habitat!

Rater received initial: _____ Date: _____

Habitat received initial: _____ Date: _____

Habitat for Humanity HVAC Subcontractor Sheet

Build Address:

Per funding requirements, Habitat for Humanity respectfully requests that the following conditions be met. Preference for the ACCA/Advanced Energy QA Contractor credential is hereby stated; credentialed contractors within a reasonable distance of potential project areas – listed below – are included in this bid solicitation process.

IF INSTALLING FURNACE

- Please select heating equipment that DOES NOT EXCEED 140% of total heat loss (as determined by attached Manual J, calculated according to funding requirements), 200% if paired with cooling components.
- Installed filters must be MERV 6 or better.
- Heating equipment must be listed in the AHRI-certified online database (<https://www.ahridirectory.org>).
- Furnace minimum 95% AFUE; Boiler minimum 90% AFUE.

IF INSTALLING COOLING SYSTEM

- Please select cooling equipment that DOES NOT EXCEED 130% for single-speed compressor, 140% for two-speed compressor or 160% for variable-speed compressor.
- Cooling equipment must be listed in the AHRI-certified online database (<https://www.ahridirectory.org>).
- A/C minimum 13 SEER.

IF INSTALLING WHOLE-HOUSE VENTILATION SYSTEM

- Ventilation system must provide fresh air according to MN Energy Code 1322 (2015) requirements.
- Provide documentation with the programmed airflow and run times.
- If utilizing HVAC fan, specified fan must be ECM OR controls will reduce standalone ventilation run-time during HVAC operation.

IF INSTALLING DUCT SYSTEM FOR HEATING, COOLING OR VENTILATION

- All boots must be sealed to subfloor or ceiling.
- ANY UNDERCOUNTER SUPPLIES must be hard-ducted TO THE KICKPLATE.
- Ducts must be sealed at all seams, elbows and transitions.
- **DUCT SYSTEM WILL BE TESTED FOR AIR TIGHTNESS.**
 - This applies to the TOTAL leakage – which includes ducts located inside conditioned space – and leakage to outside. **This applies even if ALL ducts are located in conditioned space.**
 - Total leakage cannot exceed 8 CFM per 100 SF of floor space; outside leakage cannot exceed 4 CFM per 100 SF of floor space.
- **System can be pre-tested at rough in** if desired.

IF INSTALLING POINT-SOURCE VENTILATION

- Kitchen range hood must be exterior-vented and will be tested for rated airflow.
- Bath fans must be ENERGY STAR rated and will be tested for rated airflow.

GENERAL

- Contractor may be provided the Manual J OR may elect to complete in-house.
- Contractor may be provided the ENERGY STAR for Homes HVAC Design Report OR may elect to complete.
- Contractor will be provided the ENERGY STAR for Homes HVAC Commissioning Checklist.
- Interior caulks and sealants must be low/no volatile organic compound (VOC) within the limits listed on the reverse of this sheet.
- This sheet should be signed by the accepted bidder, and collected by the affiliate.

Thank you very much for your cooperation.

CONTRACTOR INITIALS _____ BY _____ DATE _____

VOC Limits Table

Adhesive/sealant	Not to exceed, gm/ltr	Adhesive/sealant	Not to exceed, gm/ltr
Indoor carpet adhesives	50	Ceramic tile adhesives	65
Carpet pad adhesives	50	VCT and asphalt tile adhesives	50
Outdoor carpet adhesives	150	Dry wall and panel adhesives	50
Wood flooring adhesive	100	Cove base adhesives	50
Rubber floor adhesives	60	Multipurpose construction adhesives	70
Subfloor adhesives	50	Structural glazing adhesives	100

HVAC Company	Base City	Phone	Habitat service county - required bid
The McBride Company Inc	Prior Lake	(952) 447-8124	Twin Cities
B & C Plumbing, Inc	Hutchinson	(320) 234-6900	McLeod, Meeker, Renville, Sibley
Silver Tree Plumbing and Heating	Saint Paul	(651) 319-4200	Twin Cities
Binder Heating & Air Conditioning Inc.	South St Paul	(651) 457-8781	Twin Cities
The Heating Guy	Minneapolis	(612) 554-9251	Twin Cities
Massmann Geothermal & Mechanical, LLC	Zimmerman	(763) 389-0376	Benton, Stearns, Mille Lacs, Isanti
7 Metro Heating & Air Conditioning	Ham Lake	612-554-1988	Twin Cities
Optimum Mechanical Systems	Little Canada	(651) 429-2302	Twin Cities
Go Fetsch Mechanical, LLC	Saint Paul	(651) 462-3601	Twin Cities
Greeley Plumbing Heating & A/C, LLC	Alexandria	320-763-7333	Douglas, Stearns, Pope, Stevens, Grant, Otter Tail, Todd
KB Mechanical, Inc.	Mounds View	763-742-4588	Twin Cities
Voss Plumbing and Heating of Paynesville, Inc.	Paynesville	320-243-3644	Stearns, Meeker, Kandiyohi, Pope
Perfection Heating and Air Conditioning	Maplewood	651-777-7620	Twin Cities
Heating & Cooling Two	Maple Grove	763-428-3677	Twin Cities
Larson Plumbing & Heating, Inc.	Andover	763-427-7680	Isanti, Sherburne, Chisago
Cliff Solem & Son, LLC	Duluth	218-721-4477	Duluth Area
J-Berd Mechanical Contractors, Inc.	Saint Cloud	320-656-0847	Stearns, Sherburne, Benton, Morrison
Heating & Cooling Design, Inc.	Blaine	612-328-7172	Twin Cities