Neighborhood Energy Connection

Residential Energy Specification

Customer: City of Saint Paul

Auditor:Jimmie Sparks

Address: 279 Bates Ave

Phone:651-221-4462 x123

Spec ID#	Spec Title	Specification	Location / Notes
104	Replace Furnace with 95% AFUE Forced Air Furnace	Remove existing furnace, recycle all metal components and dispose of all other materials in a code legal dump. Install a new ENERGY STAR rated, gas-fired, forced air furnace with a minimum AFUE rating of 95% with 2" rise above floor. Connect to existing duct work and gas line. New furnace to be vented with PVC piping per manufacturer's specifications. New furnace will have minimum limited warranties of 20 years on heat exchangers; 5 years on parts. Include auto set back thermostat controls, vent pipe & new shut-off valve. Rework cold air return if necessary to ensure easy access, good fit & easy replacement of air filter. An exterior return air filter box shall be installed on one side, both sides or bottom of new furnace. Seal all exposed duct joints with duct mastic. Remove all existing cloth duct tape prior to installing mastic.	
304	Replace Water Heater with Power Vented .65 EF	Replace water heater with a power-vented water heater with an EF of .65 or greater. Include pressure & temperature release valve, discharge tube to within 6" of floor and PVC flue to power vent to exterior.	

500	Seal Attic Bypasses	Contractor shall seal all attic bypasses. Bypasses shall be defined as any break in the envelope of a house between a heated living space and an unheated area or exterior. Bypass locations include, but are not limited to, the following areas: chimneys, soil stacks, end walls, dropped ceilings, open plumbing walls, beneath kneewalls and around duct work, electrical work and attic access points. Bypasses shall be sealed in such a manner that the movement of air through the bypass is essentially stopped. "Essentially stopped" means that air leakage will not be detected by an infrared scan when the house is pressurized to 30 Pascals. Materials to be used for sealing bypasses depend on the size and location of the bypass and meet code requirements. These materials include high quality caulks (20-year life span), polyethylene rod stock, foam, sheetrock, sheet metal, extruded polystyrene and densely packed insulation.	

502	Dense Pack Below Floor and blow above floor to R-50	All bypasses shall be sealed before insulating in such a manner that the movement of air through the bypass is essentially stopped. "Essentially stopped" means that air leakage will not be detected by an infrared scan when the house is pressurized to 30 Pascals. Floored attics shall be blown below floor boards using the Dense Pack Method to a minimum density 3.5 pcf. Blow above floorboards to bring below and above total to R-50 or more.	Small hidden attics on 2nd floor , the North east side of home. Need to dense pack floors of these areas
510	Blow Open Attic to R-50	All bypasses shall be sealed before insulating in such a manner that the movement of air through the bypass is essentially stopped. "Essentially stopped" means that air leakage will not be detected by an infrared scan when the house is pressurized to 30 Pascals. Blow insulation to depth indicated on manufacturer's coverage chart, consistently and evenly to R-50. Insulation in the peak attic must be marked with a ruler to measure depth and a sign with the number of bags used and the date of the installation.	
512	Dense Pack Slants to capacity with cellulose	Determine cavities are free of hazards and can support dense packing pressures, locate drilling hazards, control dust when drilling from interior. Blow Slant walls with cellulose to capacity using the Dense Pack Method to a minimum density 3.5 pcf.	
518	Dense Pack Enclosed kneewalls	All kneewalls shall have a top and bottom plate or blockers installed using a rigid material. If fabric material is used before dense packing, secure it with 1" crown staples every 2" or furring strips every wall stud. If rigid material is used it must cover the entire surface of the accessible kneewall area. If foam sheathing is used, it must be listed for uncovered use in an attic; or covered with an ignition/thermal barrier. Blow kneewalls to capacity using the Dense Pack Method to a minimum density of 3.5 pcf	

532	Build Dam, insulate and weatherstrip attic hatch	Access hatch door to attic shall be insulated to R-50 and insulation dam constructed around opening. Opening shall be weatherstripped to provide a tight seal.	
608	Wall insulation - Exterior Application: Remove Siding, Drill, Dense Pack, Plug and Replace Siding	Siding shall be removed before drilling access holes. Determine cavities are free of hazards and can support dense packing pressures, locate drilling hazards, control dust when drilling from interior. Completely fill each cavity to a consistent density. Dense pack cellulose to a minimum density of 3.5 lbs/cubic foot or dense pack spider fiberglass per manufacturer's instructions. Siding must be replaced without damage and nailed back with appropriate galvanized nails.	
806	Air Seal and Insulate Rim Joist using two-part foam	Apply two-part foam evenly and consistently according to manufacturer's instructions to insulate to R-10 around basement rim joist.	
1000	Install ENERGY STAR	Install an ENERGY STAR rated exhaust fan connected with insulated rigid	

	Rated Kitchen Fan	ductwork into a dampered vent.	
1200	Replace incandescents with CFLs	Replace incandescent bulbs with ENERGY STAR rated compact flourescent lights. Install fixtures that meet the lighting needs of the particular area.	
1212	Install ENERGY STAR Rated Dishwasher	Install ENERGY STAR rated dishwasher including all alterations and connections to plumbing and electric system. Remove existing dishwasher, recycle all metal components and dispose of all other materials in a code legal dump.	

Home Energy Rating Certificate

279 Bates Ave

Saint Paul, MN 55106

3 Stars
Site Visit

Uniform Energy Rating System — **Energy Efficient**

1 Star	1 Star Plus	2 Stars	2 Stars Plus	3 Stars	3 Stars Plus	4 Stars	4 Stars Plus	5 Stars	5 Stars Plus
500-401	400-301	300-251	250-201	200-151	150-101	100-91	90-86	85-71	70 or Less

HERS Index: **184**

DRAFT

General Information

Conditioned Area:	2385 sq. ft.	HouseType:	Single-family detached
Conditioned Volume:	19083 cubic ft.	Foundation:	Conditioned basement
Bedrooms:	4		

Mechanical Systems Features

Heating:	Fuel-fired air distribution, Natural gas, 80.0 AFUE.
Water Heating:	Conventional, Natural gas, 0.52 EF, 40.0 Gal.
Duct Leakage to Outside:	RESNET/HERS default
Ventilation System:	None
Programmable Thermostat:	Heating: No Cooling: No

Building Shell Features

Ceiling Flat:	NA	Exposed Floor:	R-0
Vaulted Ceiling:	R-19, R-0	Window Type:	S W Op (w/St)
Above Grade Walls:	R-0	**Infiltration:**	
Foundation Walls:	R-0.0	Rate:	Htg: 5895 Clg: 5895 CFM50
Slab:	R-0.0 Edge, R-0.0 Under	Method:	Blower door test

Lights and Appliance Features

Percent Interior Lighting:	0.00	Range/Oven Fuel:	Natural gas
Percent Garage Lighting:	0.00	Clothes Dryer Fuel:	Natural gas
Refrigerator (kWh/yr):	775.00	Clothes Dryer EF:	2.67
Dishwasher Energy Factor:	0.46	Ceiling Fan (cfm/Watt):	0.00

The Home Energy Rating Standard Disclosure for this home is available from the rating provider.

REM/Rate - Residential Energy Analysis and Rating Software v12.99

This information does not constitute any warranty of energy cost or savings.

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Registry ID:	
Rating Number:	
Certified Energy Rater:	Jimmie Sparks
Rating Date:	10/4/13
Rating Ordered For:	City of St Paul

Estimated Annual Energy Cost

Site Visit

Use	MMBtu	Cost	Percent
Heating	317.3	$2607	75%
Cooling	0	$0	0%
Hot Water	26.1	$208	6%
Lights/Appliances	30.3	$529	15%
Photovoltaics	-0.0	$-0	-0%
Service Charges		$132	4%
Total		**$3477**	**100%**

This home meets or exceeds the minimum criteria for all of the following:

TITLE
Company
Address
City, State, Zip
Phone #
Fax #

Home Energy Rating Certificate

279 Bates

Saint Paul, MN 55106

5 Stars
Projected Rating

Uniform Energy Rating System — **Energy Efficient**

1 Star	1 Star Plus	2 Stars	2 Stars Plus	3 Stars	3 Stars Plus	4 Stars	4 Stars Plus	5 Stars	5 Stars Plus
500-401	400-301	300-251	250-201	200-151	150-101	100-91	90-86	85-71	70 or Less

HERS Index: **80**

DRAFT

General Information

Conditioned Area:	2385 sq. ft.	HouseType:	Single-family detached
Conditioned Volume:	19083 cubic ft.	Foundation:	Conditioned basement
Bedrooms:	4		

Mechanical Systems Features

Heating:	Fuel-fired air distribution, Natural gas, 95.0 AFUE.
Water Heating:	Conventional, Natural gas, 0.65 EF, 40.0 Gal.
Duct Leakage to Outside:	RESNET/HERS default
Ventilation System:	Exhaust Only: 75 cfm, 15.0 watts.
Programmable Thermostat:	Heating: Yes Cooling: Yes

Building Shell Features

Ceiling Flat:	R-50	Exposed Floor:	R-35
Vaulted Ceiling:	R-19	Window Type:	NFRC .35 / .29
Above Grade Walls:	R-13	**Infiltration:**	
Foundation Walls:	R-0.0	Rate:	Htg: 2000 Clg: 2000 CFM50
Slab:	R-0.0 Edge, R-0.0 Under	Method:	Blower door test

Lights and Appliance Features

Percent Interior Lighting:	100.00	Range/Oven Fuel:	Natural gas
Percent Garage Lighting:	0.00	Clothes Dryer Fuel:	Natural gas
Refrigerator (kWh/yr):	336.00	Clothes Dryer EF:	2.67
Dishwasher Energy Factor:	0.46	Ceiling Fan (cfm/Watt):	0.00

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Registry ID:	
Rating Number:	
Certified Energy Rater:	Jimmie Sparks
Rating Date:	10/16/13
Rating Ordered For:	City of St Paul

Estimated Annual Energy Cost

Projected Rating

Use	MMBtu	Cost	Percent
Heating	124.2	$1017	59%
Cooling	0	$0	0%
Hot Water	21.7	$174	10%
Lights/Appliances	24.6	$411	24%
Photovoltaics	-0.0	$-0	-0%
Service Charges		$132	8%
Total		**$1734**	**100%**

This home meets or exceeds the minimum criteria for all of the following:

TITLE
Company
Address
City, State, Zip
Phone #
Fax #