

Neighborhood Energy Connection

Residential Energy Specification

Customer: City of Saint Paul

Auditor: Terry Cagle-Kemp

Address: 700 4th St E

Phone: 651-221-4462 x122

Spec ID#	Spec Title	Specification	Location / Notes
202	Replace Boiler with 90% AFUE Hot Water Boiler	Replace existing boiler with a gas fired, modulating, direct vent, 90% AFUE+ hot water boiler. Installation to include all power & control wiring, a set-back thermostat, expansion tank, one circulation pump, water & gas supply & flue piping. The installation is required to maintain a minimum 70 F indoor temperature evenly throughout the conditioned space when outdoor temperature is - 10 F. Remove existing boiler, recycle all metal components and dispose of all other materials in a code legal dump.	Option 1 Note: Run piping to 1 st fl back room and install baseboard radiator
204	Replace Boiler with 90% AFUE Hot Water Boiler & Sidearm water heater	Replace existing boiler with a gas fired, modulating, direct vent, 90% AFUE+ hot water boiler. Installation to include all power & control wiring, a set-back thermostat, expansion tank, one circulation pump, water & gas supply & flue piping. The installation is required to maintain a minimum 70 F indoor temperature evenly throughout the conditioned space when outdoor temperature is - 10 F. Install an indirect fired 40 gallon water tank as a separate zone on the boiler with a maximum heat loss rating of 1 degree per hour.	Option 2 Note: Run piping to 1 st fl back room and install baseboard radiator

		Remove existing boiler, recycle all metal components and dispose of all other materials in a code legal dump.	
300	Replace Water Heater with .62 EF Water Heater	Replace water heater with a water heater with an EF of .62 or greater. Include pressure & temperature release valve, discharge tube to within 6" of floor and PVC flue to power vent to exterior.	Option 1
306	Replace Water Heater with Sidearm water heater	See 204	Option 2
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.	May already be insulated
524	Insulate Porch floor over basement	Insulate by installing 6" (R19) encapsulated fiberglass batts attached permanently and directly against permanently and directly against the floorboards above. Alternatively, spray cavities to full depth of joists and install fire rated barrier.	
526	Insulate Above Bay Window	Insulate space above bays to capacity. Insulate floor to capacity. Access holes must be patched, plugged and painted as necessary.	

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.	
912	Insulate crawl space walls	Install poly on the ground. Crawl space walls shall be insulated by installing 6" (R19) encapsulated fiberglass batts attached permanently and directly against rim joist, band joist and exterior walls extending one foot onto poly ground covering. Alternatively, use spray foam on rim joist, band joist and walls to R-19. May Not have enough room to gain access.	Will need to cut hole in foundation wall from basement for access
1000	Install ENERGY STAR Rated Kitchen Fan	Install an ENERGY STAR rated exhaust fan connected with insulated rigid ductwork into a dampered vent.	
1010	Install ENERGY STAR Rated 2-stage Bathroom Fan	Install an ENERGY STAR rated two-speed bathroom fan .8 sones or less, with a pre-set low-speed of 10-30 CFM and a high-speed boost capability of 70-110 CFM initiated by a wall switch or motion detector. Vent bathroom fan using rigid duct and insulated with fiberglass and vented out with dampered roof vent.	
1200	Replace incandescent lights with CFLs	Replace incandescent bulbs with ENERGY STAR rated compact fluorescent 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.	
1214	Install ENERGY STAR Rated Refrigerator	Install ENERGY STAR rated refrigerator sized appropriately for the household. Remove existing refrigerator, recycle all metal components and dispose of all	

		other materials in a code legal dump.	
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Home Energy Rating Certificate

700 4th St E
St Paul, MN 55106



**3 Stars Plus
Projected Rating**

Uniform Energy Rating System

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

Energy Efficient

HERS Index: 127

General Information

Conditioned Area: 2654 sq. ft.
 Conditioned Volume: 20105 cubic ft.
 Bedrooms: 3
 House Type: Single-family detached
 Foundation: More than one type

Mechanical Systems Features

Heating: Fuel-fired hydronic distribution, Natural gas, 80.0 % EFF.
 Heating: Electric baseboard or radiant, Electric, 100.0 % EFF.
 Water Heating: Conventional, Natural gas, 0.54 EF, 40.0 Gal.
 Duct Leakage to Outside: NA
 Ventilation System: None
 Programmable Thermostat: Heating: No Cooling: No

Building Shell Features

Ceiling Flat: R-15, R-11
 Vaulted Ceiling: R-0, R-11
 Above Grade Walls: R-11
 Foundation Walls: R-0.0
 Slab: R-0.0 Edge, R-0.0 Under
 Exposed Floor: R-0
 Window Type: S W Op (w/St)
Infiltration:
 Rate: Htg: 4733 Clg: 4733 CFM50
 Method: Blower door test

Lights and Appliance Features

Percent Interior Lighting: 10.00
 Percent Garage Lighting: 0.00
 Refrigerator (kWh/yr): 691.00
 Dishwasher Energy Factor: 0.46
 Range/Oven Fuel: Natural gas
 Clothes Dryer Fuel: Natural gas
 Clothes Dryer EF: 3.01
 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: Terry Cagle-Kemp

Rating Date: 10/15/13

Rating Ordered For: City of St Paul, HRA

Estimated Annual Energy Cost

Projected Rating

Use	MMBtu	Cost	Percent
Heating	203.5	\$1741	67%
Cooling	0	\$0	0%
Hot Water	22.8	\$182	7%
Lights/Appliances	30.0	\$538	21%
Photovoltaics	-0.0	\$-0	-0%
Service Charges		\$132	5%
Total		\$2594	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

700 4th St E
St Paul, MN 55106



5 Stars
Projected Rating

Uniform Energy Rating System

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

Energy Efficient

HERS Index: **77**

General Information

Conditioned Area: 2654 sq. ft.
Conditioned Volume: 20105 cubic ft.
Bedrooms: 3

House Type: Single-family detached
Foundation: More than one type

Mechanical Systems Features

Heating: Fuel-fired hydronic distribution, Natural gas, 90.0 AFUE.
Water Heating: Conventional, Natural gas, 0.67 EF, 40.0 Gal.

Duct Leakage to Outside: NA
Ventilation System: Exhaust Only: 74 cfm, 13.0 watts.
Programmable Thermostat: Heating: No Cooling: No

Building Shell Features

Ceiling Flat: R-50, R-30
Vaulted Ceiling: R-19, R-15
Above Grade Walls: R-11
Foundation Walls: R-0.0
Slab: R-0.0 Edge, R-0.0 Under

Exposed Floor: R-0
Window Type: NFRC .30 / .29

Infiltration:
Rate: Htg: 2200 Clg: 2200 CFM50
Method: Blower door test

Lights and Appliance Features

Percent Interior Lighting: 100.00
Percent Garage Lighting: 0.00
Refrigerator (kWh/yr): 432.00
Dishwasher Energy Factor: 0.46

Range/Oven Fuel: Natural gas
Clothes Dryer Fuel: Natural gas
Clothes Dryer EF: 3.01
Ceiling Fan (cfm/Watt): 0.00

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

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Registry ID:

Rating Number:

Certified Energy Rater: Terry Cagle-Kemp

Rating Date: 10/15/13

Rating Ordered For: City of St Paul, HRA

Estimated Annual Energy Cost

Projected Rating

Use	MMBtu	Cost	Percent
Heating	125.2	\$1004	59%
Cooling	0	\$0	0%
Hot Water	18.8	\$150	9%
Lights/Appliances	24.4	\$422	25%
Photovoltaics	-0.0	\$-0	-0%
Service Charges		\$132	8%
Total		\$1709	100%

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

TITLE

Company

Address

City, State, Zip

Phone #

Fax #