

## Application (Page 1 of 4)

### PARTICIPANT INFORMATION

Company Name: Wachtler Marshall  
Contact Name: Dan Wachtler  
Address: 335 Parkplace Center Suite 119  
City: Kirkland State: WA Zip: 98033  
Phone: 253-225-1900  
Email: dan.wachtler@gmail.com Website: www.wachtlermarshall.com

### CATEGORY ENTRY (check one category)

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Single Family Homes (over 3,000 sq. ft.) | <input type="checkbox"/> Commercial/Industrial/Institutional Buildings under 10,000 sq. ft. |
| <input type="checkbox"/> Single Family Homes (under 3,000 sq ft.)            | <input type="checkbox"/> Commercial/Industrial/Institutional Buildings over 10,000 sq. ft.  |
| <input type="checkbox"/> Multifamily   | <input type="checkbox"/> Renovations  |
| <input type="checkbox"/> Agricultural  | <input type="checkbox"/> Affordable Housing   |

### PROJECT INFORMATION

Project Name: Wachtler Residence  
Address: 8706 92nd St. NW  
City: Gig Harbor State: WA Zip: 98332  
Date completed: November 2013  
Total cost of project (exclusive of land): \$600,000  
Dimensions of building (all floors of multi-story building):  
See Floor plans  
Asking price/purchase price (Affordable Housing only):  
3,800 sq. ft

### BUILT BY (if different than applicant)

Company Name: \_\_\_\_\_  
Contact Name: \_\_\_\_\_ Phone: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

### PANELS MANUFACTURED BY (members only)

Company Name: Premier SIPs

*Continued*

## Application (Page 2 of 4)

**DESIGNED BY** (if different than applicant – SIPA will only recognize members)

Company Name: **Steve Wachtler - Architect**

Contact Name: **Steve Wachtler**

Phone: **253-225-4458**

Address: **2135 South Yakima Ave**

City: **Tacoma**

State: **WA**

Zip: **98405**

**Please answer each question with as much detail as possible to help in the judging process.**

**Attach additional sheets if necessary.**

Describe the end use of the building:

Private residence

How did SIP construction help you get this job?

Building an all SIPs home was a "must" requirement by the homeowners.

SIP wall thickness and core material: **6 inch SIPs**

SIP roof thickness and core material: **10 inch SIPs**

Describe the benefits of using SIPs on this project. Did SIPs help save time, labor, construction costs, or energy?

Energy Savings- the tightness of the building envelope 1.36 ACH is the "enabling technology allowing for the optimization of the ductless heat pump system, the energy-efficient gas hot water heater, and the other energy efficient equipment and features in the home.

The homeowners think they saved money on the SIP materials and construction time compared to alternative methods and materials to achieve the same level of energy performance.

Describe any innovative design elements or structural engineering involved:

Vented SIP flat roof over the laundry room

Stairs were made with lumber milled from trees cut down while clearing the site. The open stair design and tall windows on the East elevation allow for natural light to flood the stairway and hallway leading to the great room throughout the day. Insulated headers were used throughout the home. Insulated headers were designed and installed vertically on both sides of the tall windows in the stairwell instead of 2 x 6s to provide added insulation and structural properities.

## Application (Page 3 of 4)

Please list any certifications the project received, such as ENERGY STAR, LEED, National Green Building Standard, or local green building programs. Only list certifications that are completed:

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HERS Index (residential projects): 57 based on framing stage report final report should be 55 or better

Blower door test results (ACH50) (residential projects): 1.36 ACH 50 (see attached final report)

Energy use intensity in kBtu/ft<sup>2</sup> (commercial projects):

Describe the HVAC system used on the project:

Daiken Ductless heat pumps.

One multi-zone outdoor unit 4MXS32JVJU (45K BTU)

Two concealed units FDXS15DVJU and FDXSO12DVJU

Two wall-mounted units Model CTXSO9DVJU

FRESH AIR IS PROVIDED THROUGH A FANTECH HEPA FILTRATION UNIT WITH VARIABLE SPEED MOTOR. PANASONIC WHISPER PANS IN THE BATHROOMS AND LAUNDRY AREAS UPSTAIRS AND ON THE 1ST FLOOR ARE PROGRAMMED TO PROVIDE CONTINUOUS VENTILATION

Describe any other energy-saving materials used in the building envelope other than SIPs. List U-values of windows used and the R-value of any insulation materials.

Milgard Windows. Double glazed, Low-E 3DMAX argon filled U-Value varies from .27 to .29 depending on whether the window is an awning, casement or fixed.

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Please list any energy-efficient products or design features, such as lighting, hot water heating, appliances, passive solar:

70% LED lighting. LED lighting in all high use areas such as the great room, kitchen and hallways.

AO Smith Vertex gas water heater 96% thermal efficiency

Kitchenaid refrigerator and Dishwasher are Energy Star rated

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Were any solar panels installed on the project? If so, indicate the size of the system:

The home is wired in anticipation of solar panels but none installed at this time.

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Continued



## Application (Page 4 of 4)

Please list any sustainable materials or design features not listed above, such as recycled materials, low-VOC finishes, landscaping, etc.:

The landscaping is left natural for the most part on this one-acre site. Additional native plants are provided by a local native plant nursery.

Any additional comments on the project:

The design uses laminated beams and SIPs as a roof system that allows for vaulted ceilings, open spaces with natural light coming in to the great room/kitchen area from all directions, North, South, East and West.

Wood and tile flooring is used throughout the home. This, along with the southern orientation, slab on grade construction, window design and placement, provide for some passive solar benefit.

A FINAL ENERGY AUDIT WAS CONDUCTED BY A CERTIFIED RESNET HOME ENERGY RATER ON 4-16-14. THE HOME QUALIFIES FOR WASHINGTON STATE ENERGY STAR. ENERGY STAR V3 AND THE DOE CHALLENGE HOME

### CHECKLIST

- ☒ My company is a SIPA member. Panels for this project were manufactured by a SIPA member.
- ☒ I have answered ALL the questions completely
- ☒ I have enclosed the two required electronic images of the completed project meeting the requirements stated in the SIPA Building Excellence Awards guidelines
- ☒ I have indicated the HERS Index as determined by a RESNET certified home energy rater (residential projects)

**PLEASE CONFIRM:** I have read and understand the rules for this competition. This entry is structural insulated panel construction as defined in the SIPA Building Excellence Awards guidelines. I understand by making this submission that my pictures will be used by the Structural Insulated Panel Association (SIPA) to promote the use of structural insulated panels. I hereby give permission to SIPA to use the enclosed pictures for any use they see fit in that endeavor. I understand that where possible, SIPA will give credit for pictures used to my company as listed above.

Signature:

Bill Wachter

Date:

4-16-14

Entries that do not contain all required materials or are received after **April 11, 2014** will not be considered

Complete application and submit electronically to [chris@schwindcommunications.com](mailto:chris@schwindcommunications.com)

Or send hard copy applications to SIPA office:

1201 Pacific Ave, Suite 600  
Tacoma, WA 98402



Structural Insulated  
Panel Association

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[www.sips.org](http://www.sips.org)

## AIR LEAKAGE TEST RESULTS

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Date of Test: 4/16/2014

Test File: FinalTest\_DO

Technician: DLD

Project Number:

Test Performed For: Bill Wachtler  
8706 92nd St NW  
Gig Harbor, WA 98335

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### Test Results

1. Measured Leakage: **44 sq. in. (797 CFM @ 50 Pa)**

This leakage area represents the cumulative size of all holes and cracks in the exterior of your house through which unconditioned outside air enters your home and conditioned air escapes.

2. Est. Annual Air Change Rate: **0.06 air changes/hour (7.5 CFM/person) \***

3. Est. Cost of Air Leakage **\$ 42 per year (heating and cooling) \***

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### Ventilation Guideline

ASHRAE Standard 62.2-2010 recommends minimum ventilation requirements for residential buildings to maintain acceptable indoor air quality. Based on the results of this airtightness test, Standard 62.2-2010 recommends that a whole building mechanical ventilation rate of **72 CFM** be continuously provided in this building. \*\*

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### Additional Information

If some of the house leakage is located in the forced air duct system, both the leakage rate and energy costs will tend to be higher than reported above. Duct leaks result in much greater air leakage because they are subjected to much higher pressures than typical house leaks. Duct leaks can also seriously degrade indoor air quality.

Many factors contribute to indoor air quality including ventilation rates, sources and locations of pollutants, proper operation of combustion appliances and occupant behavior. Additional testing is needed to fully evaluate the air quality in your house.

\* The estimated annual air change rate is based on ASHRAE Standard 136-93 and assumes no mechanical ventilation. Actual air change rates and costs may differ from these estimates by a factor of 2 or more.

\*\* ASHRAE Standard 62.2-2010 also contains requirements for local kitchen and bathroom mechanical exhaust systems. These local exhaust systems may be incorporated into a whole building ventilation strategy. Consult Standard 62.2-2010 for more information on ventilation strategies and specific requirements and exceptions contained in the Standard.

## BUILDING LEAKAGE TEST

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Date of Test: 4/16/2014

Test File: FinalTest\_DO

Customer: Bill Wachtler  
8706 92nd St NW  
Gig Harbor, WA 98335

Technician: DLD

Project Number:

Building Address: 8706 92nd St NW  
Gig Harbor, WA 98335

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### Test Results

- Airflow at 50 Pascals: 797 CFM50 ( +/- 1.0 % )  
(50 Pa = 0.2 w.c.) 1.36 ACH50
  - Leakage Area: 43.8 in2 LBL ELA @ 4 Pa
  - Building Leakage Curve: Flow Coefficient (C) = 50.5 ( +/- 7.1 % )  
Exponent (n) = 0.705 ( +/- 0.020 )  
Correlation Coefficient = 0.99961
  - Test Settings: Test Standard: RESNET Multi-Point Test  
Test Mode: Depressurization
  - Accuracy Level Standard Level of Accuracy Test
- 

### Infiltration Estimates

- Estimated Average Annual Infiltration Rate: 37.7 CFM  
0.06 ACH  
7.5 CFM per person  
(using bedrooms + 1)
  - Estimated Design Infiltration Rate: Winter: 55.0 CFM Summer: 37.9 CFM  
0.09 ACH 0.06 ACH
- 

### Cost Estimates

- Estimated Cost of Air Leakage for Heating: \$ 42 per year heating
  - Estimated Cost of Air Leakage for Cooling: \$ 0 per year cooling
- 

### Mechanical Ventilation Guideline (based on ASHRAE 62.2-2010)

Recommended Whole Bldg Rate: 71.9 CFM  
Base Rate: 71.9 CFM  
Infiltration Credit: <0.0 CFM>

**BUILDING LEAKAGE TEST Page 2 of 4**Date of Test: 4/16/2014 Test File: FinalTest\_DO

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**Building Information**

Volume	<b>35112</b>
Surface Area	<b>4885</b>
Floor Area	<b>3438.5</b>
Height	<b>15</b>
# of Bedrooms	<b>4</b>
# of Occupants	<b>3</b>
Year of Construction	<b>2013</b>
Wind Shield	<b>M</b>

**Location Climate Information**

Ventilation Weather Factor	<b>0.77</b>
Energy Climate Factor	<b>22.00</b>
Heating Degree Days	<b>5531</b>
Cooling Degree Days	<b>19</b>
Design Winter Wind Speed	<b>3.5 mph</b>
Design Summer Wind Speed	<b>7.7 mph</b>
Design Winter Temp Diff	<b>47 deg F</b>
Design Summer Temp Diff	<b>8 deg F</b>

**Heating and Cooling Cost and Efficiency Information**

Heating Fuel	<b>Heat Pump HSPF</b>
Heating Fuel Cost	<b>\$0.110/kwh</b>
HSPF	<b>10.00</b>
Cooling Fuel Cost	<b>\$0.110/kwh</b>
Cooling SEER	<b>23.0</b>

**Equipment Information**

<b>Type</b>	<b>Manufacturer</b>	<b>Model</b>	<b>Serial Number</b>	<b>Custom Calibration Date</b>
<b>Fan</b>	Energy Conservatory	Model 3 (110V)		Default
<b>Micromanometer</b>	Energy Conservatory	DG700	26614-7	7/20/2010

**BUILDING LEAKAGE TEST Page 3 of 4**Date of Test: 4/16/2014 Test File: FinalTest\_DO

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**Depressurization Test:****Environmental Data**

Indoor Temperature (°F)	Outdoor Temperature (°F)	Altitude (ft)
70.0	60.0	50.0

**Data Points**

Nominal Building Pressure (Pa)	Baseline Adjusted Building Pressure (Pa)	Fan Pressure (Pa)	Nominal Flow (cfm)	Adjusted Flow (cfm)	% Error	Fan Configuration
-1.3	n/a	n/a				
-61.5	-60.4	241.8	920	905	-0.6	Ring B
-55.0	-53.8	206.3	851	836	-0.3	Ring B
-49.5	-48.3	178.1	791	778	-0.0	Ring B
-43.4	-42.2	148.6	723	711	0.6	Ring B
-37.0	-35.9	116.0	640	629	-0.2	Ring B
-31.7	-30.5	94.8	579	569	1.1	Ring B
-25.1	-23.9	66.7	486	478	0.9	Ring B
-19.5	-18.4	43.8	395	388	-1.3	Ring B
-1.0	n/a	n/a				

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**Time Averaging Period: 10**

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**Deviations from Standard RESNET Multi-Point Test - Test Parameters****None**

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**BUILDING LEAKAGE TEST Page 4 of 4**

Date of Test: 4/16/2014 Test File: FinalTest\_DO

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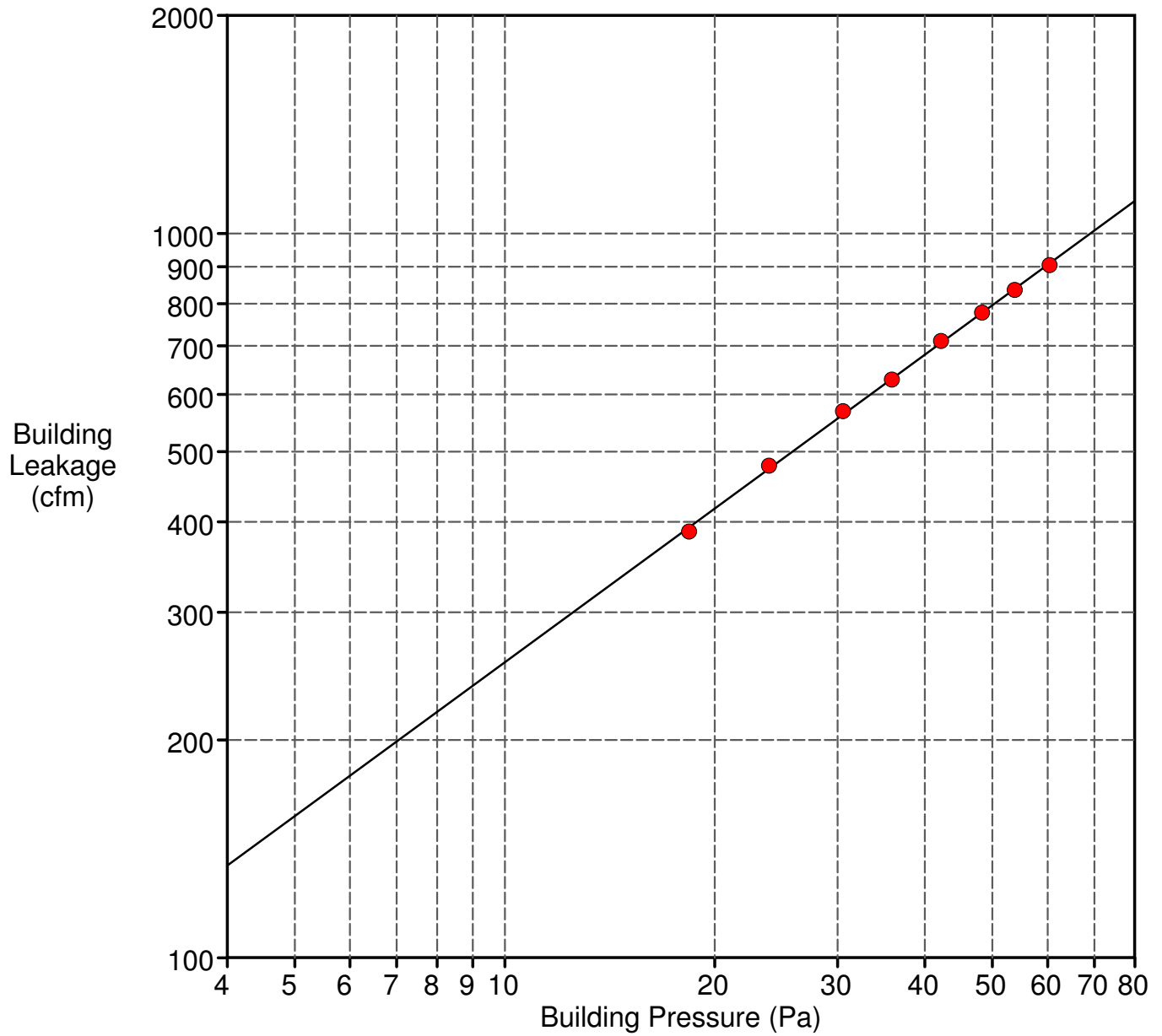
**Comments**

None

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## Building Leakage Curve

Date of Test: 4/16/2014 Test File: FinalTest\_DO



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## BUILDING FILE REPORT

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File Name: Wachtler House REM1.blg

Date: June 24, 2012

Property/Builder:		Rating	
Building Name:	Wachtler Project	Org. Name:	Viridian Northwest
Owner's Name:	Bill Wachtler	Address:	PO Box 13049
Property Address:	8706 92nd Street NW	City, St, Zip:	Olympia, WA 98508
City, St, Zip:	Gig Harbor, WA 98335	Phone No:	(360) 464-4046
Phone No:	253-225-3564	Website:	

Builder's Name:	Rater's Name:	Daimon Doyle
Phone No:	Rater's Email:	ddoyle@hctc.com
Email Address:	Rater's ID:	WAHERS0030
Model:		
Development:		

DRAFT

Rating Date:	6/21/2012
Rating Type:	Projected Rating
Reason:	New Home
Rating No.:	
Registry ID:	

### General Building Information

Area of Cond. Space(sq ft):	3892
Volume of Cond. Space:	35028
Year Built:	2012
Housing Type:	Single-family detached
Level Type(Apartments Only):	None
Floors on or Above-Grade:	2
Number of Bedrooms:	4
Foundation Type:	Slab
Enclosed Crawl Space Type:	N/A
Thermal Boundary Location:	N/A

# BUILDING FILE REPORT

Wachtler Project

Page 2

Foundation Wall Info:	1	2
Name	House	Garage
Library Type	R-10 Int, 2 ft deep	R-10 Int, 2 ft deep
Length(ft)	220.0	20.0
Total Height(ft)	2.0	2.0
Depth Below Grade(ft)	1.5	1.5
Height Above Grade(ft)	0.5	0.5
Location	Cond->ambient/grnd	Cond->garage/grnd
Uo Value (wall, airfilm, & soil)	0.078	0.078
Uo Value (wall assembly only)	0.094	0.094

## Foundation Wall: R-10 Int, 2 ft deep

Type: Solid concrete or stone

Thickness(in): 8.0

Studs: None

Interior Insulation:

Continuous R-Value: 10.0

Frame Cavity R-Value: 0.0

Cavity Insulation Grade: 1

Ins top: 0.0 ft from top of wall

Ins Bottom: 0.0 ft from bottom of wall

Exterior Insulation:

R-Value: 0.0

Ins top: 0.0 ft from top of wall

Ins bottom: 0.0 ft below grade

Note:

Slab Floor Info:	1
Name	Main Floor
Library Type	R-20 Continuous
Area(sq ft)	2372
Depth Below Grade(ft)	0.0
Full Perimeter(ft)	240
Exposed Perimeter(ft)	240
On-Grade Perimeter(ft)	240

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## BUILDING FILE REPORT

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Wachtler Project

Page 3

### Slab Floor: R-20 Continuous

Slab Covering	None
Perimeter Insulation (R-Value):	10.0
Perimeter Insulation Depth (ft):	2.0
Under-Slab Insulation (R-Value):	20.0
Under-Slab Insulation Width (ft):	17.0
Slab Insulation Grade:	1
Radiant Slab:	No
Note:	

### Above-Grade Wall:

	1	2
Name	SIPS Ext.	Garage
Library Type	SIP 5-5/8"	SIP 5-5/8"
Gross Area(sq ft)	4885.00	216.00
Exterior Color	Medium	Medium
Location	Cond -> ambient	Cond -> garage
Uo Value	0.048	0.048

DRAFT



# BUILDING FILE REPORT

Wachtler Project

Page 4

## Above-Grade Wall: SIP 5-5/8"

Quick Fill not used.

Note:

Layers	Paths		
	Foam	Framing	Spline
Inside Air Film	0.680	0.680	0.680
Gyp board	0.450	0.450	0.450
OSB	1.063	1.063	1.063
Framing	0.000	5.813	0.000
Foam	18.600	0.000	15.600
Spline	0.000	0.000	0.938
Ext. Finish (lap)	1.430	1.430	1.430
Outside Air Film	0.250	0.250	0.250
Total R-Value	22.472	9.685	20.410
U-Value	0.044	0.103	0.049
Relative Area	0.860	0.060	0.080
UA	0.038	0.006	0.004

DRAFT

Total Component UA: 0.048

Total Component Area: 1.0

Component Uo: 0.048

Window Information:	1	2	3
Name	A1	A2	A3
Library Type	PlyGem Pro200 Pic	PlyGem Pro200 Pic	PlyGem Pro200 Pic
U-Value	0.210	0.210	0.210
SHGC	0.250	0.250	0.250
Area(sq ft)	12.00	4.00	4.00
Orientation	East	West	West
Overhang Depth	2.0	1.0	1.0
Overhang To Top	2.0	10.5	7.5
Overhang To Bottom	6.0	12.5	9.5
Interior Winter Shading	0.85	0.85	0.85
Interior Summer Shading	0.70	0.70	0.70
Adjacent Winter Shading	None	None	None
Adjacent Summer Shading	None	None	None
Wall Assignment	AGWall 1	AGWall 1	AGWall 1

# BUILDING FILE REPORT

Wachtler Project

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Window Information:	4	5	6
Name	A4	B1	B2
Library Type	PlyGem Pro200 Pic	PlyGem Pro700 AW	PlyGem Pro700 AW
U-Value	0.210	0.230	0.230
SHGC	0.250	0.190	0.190
Area(sq ft)	4.00	24.50	24.50
Orientation	West	West	West
Overhang Depth	1.0	3.0	3.0
Overhang To Top	3.0	0.0	0.0
Overhang To Bottom	5.0	7.0	7.0
Interior Winter Shading	0.85	0.85	0.85
Interior Summer Shading	0.70	0.70	0.70
Adjacent Winter Shading	None	None	None
Adjacent Summer Shading	None	None	None
Wall Assignment	AGWall 1	AGWall 1	AGWall 1

Window Information:	7	8	9
Name	B3	B4	B5
Library Type	PlyGem Pro700 AW	PlyGem Pro700 AW	PlyGem Pro700 AW
U-Value	0.230	0.230	0.230
SHGC	0.190	0.190	0.190
Area(sq ft)	28.00	28.00	27.10
Orientation	East	East	East
Overhang Depth	2.0	2.0	2.0
Overhang To Top	15.0	15.0	2.0
Overhang To Bottom	23.0	23.0	9.8
Interior Winter Shading	0.85	0.85	0.85
Interior Summer Shading	0.70	0.70	0.70
Adjacent Winter Shading	None	None	None
Adjacent Summer Shading	None	None	None
Wall Assignment	AGWall 1	AGWall 1	AGWall 1

# BUILDING FILE REPORT

Wachtler Project

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Window Information:	10	11	12
Name	B6	C1	C2
Library Type	PlyGem Pro700 AW	PlyGem Pro700 CS	PlyGem Pro700 CS
U-Value	0.230	0.240	0.240
SHGC	0.190	0.190	0.190
Area(sq ft)	27.10	24.00	29.00
Orientation	East	East	North
Overhang Depth	2.0	2.0	2.0
Overhang To Top	2.0	2.0	9.2
Overhang To Bottom	9.8	6.0	14.0
Interior Winter Shading	0.85	0.85	0.85
Interior Summer Shading	0.70	0.70	0.70
Adjacent Winter Shading	None	None	None
Adjacent Summer Shading	None	None	None
Wall Assignment	AGWall 1	AGWall 1	AGWall 1

Window Information:	13	14	15
Name	C3	D1	D2
Library Type	PlyGem Pro700 CS	PlyGem Pro700 AW	PlyGem Pro700 AW
U-Value	0.240	0.230	0.230
SHGC	0.190	0.190	0.190
Area(sq ft)	36.00	23.30	23.30
Orientation	East	West	West
Overhang Depth	2.0	1.0	1.0
Overhang To Top	2.0	3.0	3.0
Overhang To Bottom	5.0	6.5	6.5
Interior Winter Shading	0.85	0.85	0.85
Interior Summer Shading	0.70	0.70	0.70
Adjacent Winter Shading	None	None	None
Adjacent Summer Shading	None	None	None
Wall Assignment	AGWall 1	AGWall 1	AGWall 1

# BUILDING FILE REPORT

Wachtler Project

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Window Information:	16	17	18
Name	E1	E2	E3
Library Type	PlyGem Pro700 AW	PlyGem Pro700 AW	PlyGem Pro700 AW
U-Value	0.230	0.230	0.230
SHGC	0.190	0.190	0.190
Area(sq ft)	47.00	47.00	47.00
Orientation	West	West	North
Overhang Depth	7.0	7.0	2.0
Overhang To Top	2.2	2.2	11.2
Overhang To Bottom	10.0	10.0	18.0
Interior Winter Shading	0.85	0.85	0.85
Interior Summer Shading	0.70	0.70	0.70
Adjacent Winter Shading	None	None	None
Adjacent Summer Shading	None	None	None
Wall Assignment	AGWall 1	AGWall 1	AGWall 1

Window Information:	19	20	21
Name	F1	G1	H1
Library Type	PlyGem Pro700 AW	PlyGem Pro700 AW	PlyGem Pro700 AW
U-Value	0.230	0.230	0.230
SHGC	0.190	0.190	0.190
Area(sq ft)	54.00	54.00	84.00
Orientation	East	East	South
Overhang Depth	3.0	3.0	4.0
Overhang To Top	3.0	3.0	0.0
Overhang To Bottom	9.0	12.0	7.0
Interior Winter Shading	0.85	0.85	0.85
Interior Summer Shading	0.70	0.70	0.70
Adjacent Winter Shading	None	None	None
Adjacent Summer Shading	None	None	None
Wall Assignment	AGWall 1	AGWall 1	AGWall 1

# BUILDING FILE REPORT

Wachtler Project

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Window Information:	22	23	24
Name	J1	J2	J3
Library Type	PlyGem Pro200 Pic	PlyGem Pro200 Pic	PlyGem Pro200 Pic
U-Value	0.210	0.210	0.210
SHGC	0.250	0.250	0.250
Area(sq ft)	16.00	16.00	16.00
Orientation	South	North	South
Overhang Depth	0.0	0.0	2.0
Overhang To Top	4.0	4.0	6.0
Overhang To Bottom	6.0	6.0	8.0
Interior Winter Shading	0.85	0.85	0.85
Interior Summer Shading	0.70	0.70	0.70
Adjacent Winter Shading	None	None	None
Adjacent Summer Shading	None	None	None
Wall Assignment	AGWall 1	AGWall 1	AGWall 1
Window Information:	25	26	27
Name	K1	K2	K3
Library Type	PlyGem Pro200 Pic	PlyGem Pro200 Pic	PlyGem Pro200 Pic
U-Value	0.210	0.210	0.210
SHGC	0.250	0.250	0.250
Area(sq ft)	12.00	12.00	12.00
Orientation	South	South	South
Overhang Depth	2.0	2.0	2.0
Overhang To Top	2.0	2.0	2.0
Overhang To Bottom	6.0	6.0	6.0
Interior Winter Shading	0.85	0.85	0.85
Interior Summer Shading	0.70	0.70	0.70
Adjacent Winter Shading	None	None	None
Adjacent Summer Shading	None	None	None
Wall Assignment	AGWall 1	AGWall 1	AGWall 1



# BUILDING FILE REPORT

Wachtler Project

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Window Information:	28	29	30
Name	L1	M1	M2
Library Type	PlyGem Pro200 Pic	PlyGem Pro200 Pic	PlyGem Pro200 Pic
U-Value	0.210	0.210	0.210
SHGC	0.250	0.250	0.250
Area(sq ft)	24.00	14.00	21.00
Orientation	West	South	South
Overhang Depth	4.0	2.0	2.0
Overhang To Top	2.0	1.0	1.0
Overhang To Bottom	10.0	5.0	7.0
Interior Winter Shading	0.85	0.85	0.85
Interior Summer Shading	0.70	0.70	0.70
Adjacent Winter Shading	None	None	None
Adjacent Summer Shading	None	None	None
Wall Assignment	AGWall 1	AGWall 1	AGWall 1
Window Information:	31	32	33
Name	N1	O1	O2
Library Type	PlyGem Pro700 OS	PlyGem Pro200 Pic	PlyGem Pro200 Pic
U-Value	0.240	0.210	0.210
SHGC	0.190	0.250	0.250
Area(sq ft)	66.00	45.00	54.00
Orientation	West	North	North
Overhang Depth	4.0	2.0	2.0
Overhang To Top	2.0	2.0	2.0
Overhang To Bottom	12.0	10.0	11.5
Interior Winter Shading	0.85	0.85	0.85
Interior Summer Shading	0.70	0.70	0.70
Adjacent Winter Shading	None	None	None
Adjacent Summer Shading	None	None	None
Wall Assignment	AGWall 1	AGWall 1	AGWall 1

# BUILDING FILE REPORT

Wachtler Project

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Window Information:	34	35	36
Name	P1	Q1	R1
Library Type	PlyGem Pro200 Pic	PlyGem Pro200 Pic	PlyGem Pro200 Pic
U-Value	0.210	0.210	0.210
SHGC	0.250	0.250	0.250
Area(sq ft)	45.00	57.00	84.00
Orientation	North	South	South
Overhang Depth	2.0	2.0	2.0
Overhang To Top	2.0	2.0	2.0
Overhang To Bottom	10.0	9.0	11.5
Interior Winter Shading	0.85	0.85	0.85
Interior Summer Shading	0.70	0.70	0.70
Adjacent Winter Shading	None	None	None
Adjacent Summer Shading	None	None	None
Wall Assignment	AGWall 1	AGWall 1	AGWall 1

Window Information:	37
Name	Office Deck Door
Library Type	Codel SF20 FL
U-Value	0.300
SHGC	0.170
Area(sq ft)	40.00
Orientation	East
Overhang Depth	2.0
Overhang To Top	7.0
Overhang To Bottom	14.0
Interior Winter Shading	0.85
Interior Summer Shading	0.70
Adjacent Winter Shading	None
Adjacent Summer Shading	None
Wall Assignment	AGWall 1

## Window: PlyGem Pro200 Pic

U-Value:	0.210
Solar Heat Gain Coefficient:	0.250
Note:	HP2Max, triple pane, dbl low-e, argon w/g

## Window: PlyGem Pro700 AW

U-Value:	0.230
Solar Heat Gain Coefficient:	0.190
Note:	HP2Max, triple pane, dbl low-e, argon w/g

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**BUILDING FILE REPORT**

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Wachtler Project

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**Window: PlyGem Pro700 CS**

U-Value:	0.240
Solar Heat Gain Coefficient:	0.190
Note:	HP2Max, triple pane, dbl low-e, argon w/g

**Window: Codel SF20 FL**

U-Value:	0.300
Solar Heat Gain Coefficient:	0.170
Note:	

**Door Information:**

1

Name	Garage Man Door
Opaque Area(sq ft)	20.0
Library Type	Codel SF6P
Wall Assignment	AGWall 2
Uo Value	0.160

**Door: Codel SF6P**

R-Value of Opaque Area:	5.3
Storm Door:	No
Note:	

**Roof Information:**

1

Name	Main Roof
Library Type	9 1/4 SIPS Roof
Gross Area(sq ft)	2372.00
Color	Medium
Radiant Barrier	No
Type(Attic)	Attic
Uo Value	0.031
Clay or Cement Tiles:	No
Sub Roof Ventilation:	No

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**BUILDING FILE REPORT**

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Wachtler Project

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**Ceiling: 9 1/4 SIPS Roof**

Quick Fill not used.

Note: Values from WSEC Framing U-Calculator

Layers	Paths		
	Foam	Framing	Spline
Inside Air Film	0.680	0.680	0.680
Gyp board	0.450	0.450	0.450
OSB (x2)	0.938	0.938	0.000
Framing	0.000	10.625	0.000
Foam	32.725	0.000	29.837
Spline	0.000	0.000	0.938
Roofing	0.500	0.500	0.500
Outside Air Film	0.250	0.250	0.250
Total R-Value	35.542	13.443	32.655
U-Value	0.028	0.074	0.031
Relative Area	0.860	0.060	0.080
UA	0.024	0.004	0.002

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Total Component UA: 0.031

Total Component Area: 1.0

Component Uo: 0.031

**Mechanical Equipment: General**

Number of Mechanical Systems:	3
Heating SetPoint(F):	68.00
Heating Setback Thermostat:	Present
Cooling SetPoint(F):	78.00
Cooling Setup Thermostat:	Present

**ASHP: Mitsubishi FE12**

Fuel Type:	Electric
Heating Seasonal Efficiency:	10.60 HSPF
Compressor Heating Output Capacity at 17F (kBtuh):	13.6
Compressor Heating Output Capacity at 47F (kBtuh):	21.0
Electric Resistance Backup Capacity (kW):	0
Cooling Output Capacity (kBtuh):	12.0
Cooling Seasonal Efficiency:	23.00 SEER
Desuperheater:	No
Note:	Mfg's Specs
Location:	Conditioned area
Performance Adjustment:	100
% Heating Load Served:	29
% Cooling Load Served:	26
Number Of Units:	1

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**ASHP: Mitsubishi GE18**

Fuel Type:	Electric
Heating Seasonal Efficiency:	10.00 HSPF
Compressor Heating Output Capacity at 17F (kBtuh):	17.2
Compressor Heating Output Capacity at 47F (kBtuh):	25.2
Electric Resistance Backup Capacity (kW):	0
Cooling Output Capacity (kBtuh):	17.2
Cooling Seasonal Efficiency:	19.20 SEER
Desuperheater:	No
Note:	Mfg's Specs
Location:	Conditioned area
Performance Adjustment:	100
% Heating Load Served:	71
% Cooling Load Served:	74
Number Of Units:	2



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## BUILDING FILE REPORT

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Wachtler Project

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### Water Heating Equipment: 80 gal. 0.91EF Elec

Water Heater Type:	Conventional
Fuel Type:	Electric
Energy Factor:	0.91
Recovery Efficiency:	0.98
Water Tank Size (gallons):	80
Extra Tank Insulation (R-Value):	0.0
Note:	
Location:	Conditioned area
Percent Load Served:	100
Performance Adjustment:	100
Number Of Units:	1

### Infiltration and Mechanical Ventilation

Whole House Infiltration	
Measurement Type:	Blower door test
Heating Season Infiltration Value:	1.20 ACH @ 50 Pascals
Cooling Season Infiltration Value:	1.20 ACH @ 50 Pascals
Shelter Class	4
2009 IECC Verification:	Tested

### Mechanical Ventilation for IAQ

Type:	Balanced
Rate(cfm):	191
Sensible Recovery Efficiency(%):	78.00
Total Recovery Efficiency(%):	85.00
Hours per Day:	24.00
Fan Power (watts):	34.00

### Ventilation Strategy for Cooling

Cooling Season Ventilation:	Natural Ventilation
-----------------------------	---------------------

### Lights and Appliances

Simplified Audit	
Refrigerator KWh:	691
Refrigerator Location:	Conditioned
Dishwasher EF:	0.46
Dishwasher Capacity:	12
Dishwasher kWh/Year:	0
Range/Oven Fuel Type:	Electric
Induction Range:	Yes
Convection Oven:	No

**Lights and Appliances**

Clothes Dryer Fuel Type:	Electric
Clothes Dryer Location:	Conditioned
Clothes Dryer Moisture Sensing:	Yes
Clothes Dryer Energy Factor:	3.01
Clothes Dryer Gas Energy Factor:	2.67
Clothes Washer Location:	Conditioned
Clothes Washer LER:	704.0
Clothes Washer MEF:	0.817
Clothes Washer Capacity:	2.874
Clothes Washer Electricity Rate:	0.08
Clothes Washer Gas Rate:	0.58
Clothes Washer Annual Gas Cost:	23.00
Percent CFLs:	80.0
Percent Fluorescent:	20.0
Percent Exterior Lights:	100.0
Percent Garage Lights:	100.0
Ceiling Fan CFM / Watt:	0.00

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**Mandatory Requirements**

## IECC Requirements

Verified IECC 04:	true
Verified IECC 06:	true
Verified IECC 09:	true
Verified IECC 12:	true
Verified IECC NY:	true

## ENERGY STAR Version 2 Checklist

Thermal Bypass Checklist:	true
ENERGY STAR Products:	true

## ENERGY STAR Version 3 Checklists

Thermal Enclosure Checklist:	true
HVAC System Quality Installation Contractor Checklist:	true
HVAC System Quality Installation Rater Checklist:	true
Water Management System Builder Checklist:	true
Indoor airPlus Verification Checklist:	true

## ENERGY STAR Version 3 Appliances

Has Refrigerators:	true
Number Of Refrigerators:	1
Has Ceiling Fans:	false
Number Of Ceiling Fans:	0
Has Exhaust Fans:	true
Number Of Exhaust Fans:	1
Has Dishwashers:	true
Number Of Dishwashers:	1

## ENERGY STAR Version 3 Basements

Basement Wall Area 50% Below Grade:	false
Basement Floor Area:	0
2009 IECC Prescriptive Requirements for ENERGY STAR v3.0	false

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## COMPONENT CONSUMPTION SUMMARY

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Date:	June 24, 2012	Rating No.:	
Building Name:	Wachtler Project	Rating Org.:	Viridian Northwest
Owner's Name:	Bill Wachtler	Phone No.:	(360) 464-4046
Property:	8706 92nd Street NW	Rater's Name:	Daimon Doyle
Address:	Gig Harbor, WA 98335	Rater's No.:	WAHERS0030
Builder's Name:			
Weather Site:	Olympia, WA	Rating Type:	Projected Rating
File Name:	Wachtler House REM1.blg	Rating Date:	6/21/2012

---

### Wachtler Project

#### HEATING SEASON (MMBtu/yr)

Ceilings/Roofs	2.8
Rim/Band Joists	0.0
Above Grade Walls	8.0
Foundation Walls	1.5
Doors	0.1
Windows/Skylights	7.7
Frame Floors	0.0
Crawl Space/Unht Bsmt	0.0
Slab Floors	2.9
Infiltration	1.8
Mechanical Ventilation	2.1
Ducts	0.0
Active Solar	0.0
Sunspace	0.0
Internal Gains	-6.7
<b>Total</b>	<b>20.3</b>

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## COMPONENT CONSUMPTION SUMMARY

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Wachtler Project

Page 2

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### Wachtler Project

#### COOLING SEASON (MMBtu/yr)

Ceilings/Roofs	-0.1
Rim/Band Joists	0.0
Above Grade Walls	-0.4
Foundation Walls	-0.2
Doors	-0.0
Windows/Skylights	1.5
Frame Floors	0.0
Crawl Space/Unht Bsmt	0.0
Slab Floors	-0.4
Infiltration	-0.2
Mechanical Ventilation	-0.2
Ducts	0.0
Active Solar	0.0
Sunspace	0.0
Internal Gains	2.1
Whole House Ventilation	-0.9
<b>Total</b>	<b>1.4</b>

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## FUEL SUMMARY

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Date:	June 24, 2012	Rating No.:	
Building Name:	Wachtler Project	Rating Org.:	Viridian Northwest
Owner's Name:	Bill Wachtler	Phone No.:	(360) 464-4046
Property:	8706 92nd Street NW	Rater's Name:	Daimon Doyle
Address:	Gig Harbor, WA 98335	Rater's No.:	WAHERS0030
Builder's Name:			
Weather Site:	Olympia, WA	Rating Type:	Projected Rating
File Name:	Wachtler House REM1.blg	Rating Date:	6/21/2012

---

### Wachtler Project

#### Annual Energy Cost (\$/yr)

Electric	\$	1860
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#### Annual End-Use Cost (\$/yr)

Heating	\$	580
Cooling	\$	38
Water Heating	\$	422
Lights & Appliances	\$	820
Photovoltaics	\$	-0
Service Charges	\$	-90
Total	\$	1950

#### Annual End-Use Consumption

Heating (kWh)	5953
Cooling (kWh)	406
Water Heating (kWh)	4388
Lights & Appliances (kWh)	8523

#### Annual Energy Demands (kW)

Heating	8.7
Cooling	1.3
Water Heating (Winter Peak)	0.8
Water Heating (Summer Peak)	0.6
Lights & Appliances (Winter Peak)	0.6
Lights & Appliances (Summer Peak)	2.0
Total Winter Peak	10.2
Total Summer Peak	4.0

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## FUEL SUMMARY

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Wachtler Project

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### Utility Rates:

Electricity: PSE Elec 5/2012

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## ENERGY COST AND FEATURE REPORT

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Date:	June 24, 2012	Rating No.:	
Building Name:	Wachtler Project	Rating Org.:	Viridian Northwest
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Property:	8706 92nd Street NW	Rater's Name:	Daimon Doyle
Address:	Gig Harbor, WA 98335	Rater's No.:	WAHERS0030
Builder's Name:			
Weather Site:	Olympia, WA	Rating Type:	Projected Rating
File Name:	Wachtler House REM1.blg	Rating Date:	6/21/2012

---

### Wachtler Project

#### ANNUAL ENERGY COSTS

Heating	\$ 580
Cooling	\$ 38
Water Heating	\$ 422
Lights & Appliances	\$ 820
Photovoltaics	\$ -0
Service Charges	\$ 90
<b>Total</b>	<b>\$ 1950</b>
<b>Average Monthly</b>	<b>\$ 162</b>

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#### ENERGY FEATURES

Ceiling w/Attic:	9 1/4 SIPS Roof U=0.031
Vaulted Ceiling:	None
Above Grade Walls:	SIP 5-5/8" U=0.048
Foundation Walls (Cond):	R-10 Int, 2 ft deep R=10.0
Found. Walls (Uncond):	None
Doors:	Codel SF6P U=0.160
Windows:	PlyGem Pro700 AW U=0.230
Frame Floors:	None
Slab Floors:	R-20 Continuous U=0.032
Infiltration:	Htg: 1.20 Clg: 1.20 ACH50
Infilt. Measure:	Blower door test
Mechanical Ventilation:	Balanced: ERV, 191 cfm, 34.0 watts.
Interior Mass:	None
Mech Equip List:	ASHP: Htg: 21.0 kBtuh, 10.6 HSPF. Clg: 12.0 kBtuh, 23.0 SEER. ASHP: Htg: 25.2 kBtuh, 10.0 HSPF. Clg: 17.2 kBtuh, 19.2 SEER.



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## ENERGY COST AND FEATURE REPORT

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Wachtler Project

Page 2

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	Water Heating: Conventional, Elec, 0.91 EF.
Programmable Thermostat:	Heat=Yes; Cool=Yes
Ducts:	NA
Duct Leakage to Outside:	NA
Total Duct Leakage:	NA
Lights/Appliances:	Defaults
Active Solar:	None
Photovoltaics:	0.00
Sunspace:	No

Notes: Where feature level varies in home, the dominant value is shown.

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## PERFORMANCE SUMMARY

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Date:	June 24, 2012	Rating No.:	
Building Name:	Wachtler Project	Rating Org.:	Viridian Northwest
Owner's Name:	Bill Wachtler	Phone No.:	(360) 464-4046
Property:	8706 92nd Street NW	Rater's Name:	Daimon Doyle
Address:	Gig Harbor, WA 98335	Rater's No.:	WAHERS0030
Builder's Name:			
Weather Site:	Olympia, WA	Rating Type:	Projected Rating
File Name:	Wachtler House REM1.blg	Rating Date:	6/21/2012

---

### Wachtler Project

#### Annual Load (MMBtu/yr)

Heating	61.3
Cooling	7.2
Water Heating	14.7

#### Annual Consumption (MMBtu/yr)

Heating	20.3
Cooling	1.4
Water Heating	15.0
Lights & Appliances	29.1
Photovoltaics	-0.0
<b>Total</b>	<b>65.8</b>

#### Annual Energy Cost (\$/yr)

Heating	\$	580
Cooling	\$	38
Water Heating	\$	422
Lights & Appliances	\$	820
Photovoltaics	\$	-0
Service Charges	\$	90
<b>Total</b>	<b>\$</b>	<b>1950</b>

#### Design Loads (kBtu/hr)

Space Heating	33.0
Space Cooling	20.7

#### Utility Rates:

Electricity: PSE Elec 5/2012

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## PERFORMANCE FACTORS

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Date:	June 24, 2012	Rating No.:	
Building Name:	Wachtler Project	Rating Org.:	Viridian Northwest
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Property:	8706 92nd Street NW	Rater's Name:	Daimon Doyle
Address:	Gig Harbor, WA 98335	Rater's No.:	WAHERS0030
Builder's Name:			
Weather Site:	Olympia, WA	Rating Type:	Projected Rating
File Name:	Wachtler House REM1.blg	Rating Date:	6/21/2012

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### Wachtler Project

#### Normalized Loads (Btu/sf shell area/DD)

Heating:	1.04
Cooling:	49.38

#### Normalized Consumption (kBtu/sf floor area/yr)

Heating:	5.2
Cooling:	0.4
Water Heating:	3.8
Lighting:	1.4
Appliances:	6.1
Photovoltaics:	-0.0
Total w/o PV:	16.9
Total:	16.9

#### Normalized Consumption (Btu/sf floor area/DD)

Heating:	0.9
Cooling:	25.1

#### Normalized Costs (\$/sf floor area/yr)

Heating:	\$	0.149
Cooling:	\$	0.010
Water Heating:	\$	0.108
Lighting:	\$	0.039
Appliances:	\$	0.171
Photovoltaics:	\$	-0.000
Total:	\$	0.478

#### Normalized Design Loads (Btu/sf shell area/DD)

Heating:	0.0006
Cooling:	0.1411

**Normalization Factors**

Floor Area:	3892
Shell Area:	10325
Heating Degree Days (B65):	5710
Cooling Degree Days (B74):	14

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## SOURCE ENERGY & EMISSIONS REPORT

Date:	June 24, 2012	Rating No.:	
Building Name:	Wachtler Project	Rating Org.:	Viridian Northwest
Owner's Name:	Bill Wachtler	Phone No.:	(360) 464-4046
Property:	8706 92nd Street NW	Rater's Name:	Daimon Doyle
Address:	Gig Harbor, WA 98335	Rater's No.:	WAHERS0030
Builder's Name:			
Weather Site:	Olympia, WA	Rating Type:	Projected Rating
File Name:	Wachtler House REM1.blg	Rating Date:	6/21/2012

### Source Energy Consumption (MMBtu/year)

*All Electric*

	<i>Reference Home</i>	<i>As Designed</i>	<i>Difference</i>	<i>% Difference</i>
Heating:	59.7	26.4	-33.3	-55.8%
Cooling:	5.2	1.8	-3.4	-65.1%
Water heating:	20.4	19.5	-0.9	-4.4%
Lights & Appliances:	49.3	37.8	-11.4	-23.2%
Photovoltaics:	0.0	0.0		
<b>Total:</b>	<b>134.5</b>	<b>85.5</b>	<b>-49.0</b>	<b>-36.4%</b>

### Total Emissions

*All Electric*

<i>Type of Emissions</i>	<i>Reference Home</i>	<i>As Designed</i>	<i>Difference</i>	<i>% Difference</i>
Carbon Dioxide (CO2) - tons/year	4.9	3.1	-1.8	-36.4%
Sulfur Dioxide (SO2) - lbs/year	2.7	1.7	-1.0	-36.4%
Nitrogen Oxides (NOx) - lbs/year	12.7	8.1	-4.6	-36.4%

### Emissions By End-Use

*(All Electric Reference Home versus As Designed)*

	CO2-tons/yr		SO2-lbs/yr		NOx-lbs/yr	
	<i>Ref</i>	<i>Des</i>	<i>Ref</i>	<i>Des</i>	<i>Ref</i>	<i>Des</i>
Heating	2.2	1.0	1.2	0.5	5.7	2.5
Cooling	0.2	0.1	0.1	0.0	0.5	0.2
Water Heating	0.7	0.7	0.4	0.4	1.9	1.8
Lights & Appliances	1.8	1.4	1.0	0.8	4.7	3.6
Photovoltaics	0.0	0.0	0.0	0.0	0.0	0.0

The energy and emission values are calculated by comparing the Rated Home to an all-electric version of the Reference Home as defined in the "Mortgage Industry National Home Energy Rating Systems Standards" as promulgated by the Residential Energy Services Network (RESNET). Site-to-source multipliers and air emission data were taken from the US EPA eGRID2007 database.



## ASHRAE 90.2 ANNUAL ENERGY CONSUMPTION COMPLIANCE

Date:	June 24, 2012	Rating No.:	
Building Name:	Wachtler Project	Rating Org.:	Viridian Northwest
Owner's Name:	Bill Wachtler	Phone No.:	(360) 464-4046
Property:	8706 92nd Street NW	Rater's Name:	Daimon Doyle
Address:	Gig Harbor, WA 98335	Rater's No.:	WAHERS0030
Builder's Name:			
Weather Site:	Olympia, WA	Rating Type:	Projected Rating
File Name:	Wachtler House REM1.blg	Rating Date:	6/21/2012

### Annual Energy Cost (\$)

	ASHRAE	As Designed
Heating:	1545	583
Cooling:	129	38
Water Heating:	469	422
<b>SubTotal - Used to Determine Compliance:</b>	<b>2144</b>	<b>1044</b>
Lights & Appliances:	838	820
Photovoltaics:	-0	-0
Service Charge:	90	90
<b>Total:</b>	<b>3072</b>	<b>1954 *</b>

This home MEETS the annual energy cost requirements of ASHRAE Standard 90.2 - 1993 based on 5710 heating degree-days and 341 cooling degree-hours. In fact, this home surpasses the requirements by 35.9%.

\* Design consumption is based on the following systems:

ASHP: Htg: 21.0 kBtuh, 10.6 HSPF. Clg: 12.0 kBtuh, 23.0 SEER.

ASHP: Htg: 25.2 kBtuh, 10.0 HSPF. Clg: 17.2 kBtuh, 19.2 SEER.

Water Heating: Conventional, Elec, 0.91 EF.

In accordance with ASHRAE Standard 90.2, building inputs, such as setpoints, infiltration rates, and window shading may have been changed prior to calculating annual energy consumption.

# Home Energy Rating Certificate

8706 92nd Street NW  
Gig Harbor, WA 98335



**5 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

**HERS Index: 57**

## General Information

Conditioned Area: 3892 sq. ft.  
Conditioned Volume: 35028 cubic ft.  
Bedrooms: 4

HouseType: Single-family detached  
Foundation: Slab

## Mechanical Systems Features

Air-source heat pump: Electric, Htg: 10.6 HSPF. Clg: 23.0 SEER.  
Air-source heat pump: Electric, Htg: 10.0 HSPF. Clg: 19.2 SEER.  
Water Heating: Conventional, Electric, 0.91 EF, 80.0 Gal.  
Duct Leakage to Outside: NA  
Ventilation System: Balanced: ERV, 191 cfm, 34.0 watts.  
Programmable Thermostat: Heating: Yes Cooling: Yes

## Building Shell Features

Ceiling Flat: U-0.031 Exposed Floor: NA  
Vaulted Ceiling: NA Window Type: PlyGem Pro700 AW  
Above Grade Walls: U-0.048  
Foundation Walls: R-10.0 Infiltration:  
Slab: R-10.0 Edge, R-20.0 Under Rate: Htg: 1.20 Clg: 1.20 ACH50  
Method: Blower door test

## Lights and Appliance Features

Percent Interior Lighting: 100.00 Range/Oven Fuel: Electric  
Percent Garage Lighting: 100.00 Clothes Dryer Fuel: Electric  
Refrigerator (kWh/yr): 691.00 Clothes Dryer EF: 3.01  
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.  
© 1985-2012 Architectural Energy Corporation, Boulder, Colorado.

**Registry ID:**

**Rating Number:**

Certified Energy Rater: Daimon Doyle

Rating Date: 6/21/2012

Rating Ordered For: Bill Wachtler

## Estimated Annual Energy Cost

Projected Rating

Use	MMBtu	Cost	Percent
Heating	20.3	\$580	30%
Cooling	1.4	\$38	2%
Hot Water	15.0	\$422	22%
Lights/Appliances	29.1	\$820	42%
Photovoltaics	-0.0	\$-0	-0%
Service Charges		\$90	5%
<b>Total</b>		<b>\$1950</b>	<b>100%</b>

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

**TITLE**

**Company**

Address

City, State, Zip

Phone #

Fax #



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## ENERGY APPRAISAL ADDENDUM

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Date:	June 24, 2012	Rating No.:	
Building Name:	Wachtler Project	Rating Org.:	Viridian Northwest
Owner's Name:	Bill Wachtler	Phone No.:	(360) 464-4046
Property:	8706 92nd Street NW	Rater's Name:	Daimon Doyle
Address:	Gig Harbor, WA 98335	Rater's No.:	WAHERS0030
Builder's Name:			
Weather Site:	Olympia, WA	Rating Type:	Projected Rating
File Name:	Wachtler House REM1.blg	Rating Date:	6/21/2012

---

This form is to be filled out and a copy attached to the Uniform Residential Appraisal Report (FHLMC Form 70; FNMA Form 1004) and submitted in conjunction with the Home Energy Rating Report.

In order to evaluate the energy efficiency of the dwelling improvements, and in the absence of comparable sales or other traditional database, the appraiser has reviewed both the estimate of energy efficiency improvement costs and calculated the present worth of the energy efficient improvements as provided by the Certified HERS Energy Rater.

The energy efficiency value increment, based on the lesser of the referenced improvement cost or present worth, estimate, is concluded in the sum of \$ \_\_\_\_\_, which represents an added value to the market value conclusion set forth in the appraisal report.

<b>ADJUSTED VALUE CONCLUSION</b>	<b>DRAFT</b>	<b>MARKET VALUE</b>	\$ _____
		<b>ENERGY-EFFICIENCY INCREMENT</b>	\$ _____
		<b>TOTAL ESTIMATED VALUE</b>	\$ _____

\_\_\_\_\_  
Appraiser Signature

\_\_\_\_\_  
Date

### SPECIAL LIMITING CONDITION FOR USE WITH FHLMC AND FNMA EEM PILOTS

In providing the final estimate of total estimated value, the appraiser has included added value based on the lower of the cost of energy improvements or a net present worth calculation of the projected energy savings of the property provided by the Certified HERS Energy Rater. The appraiser does not assume responsibility for the accuracy of the calculation provided by the rater. The appraiser has used an acceptable valuation methodology in including the cost or present worth calculation due to absence of comparable market data on energy efficient properties as stipulated by FNMA and FHLMC for the period of this pilot. The results of the present worth calculation of energy, savings and therefore the final estimate of value, are subject to variance based on the effective use and maintenance of the items and the lifestyle of the occupants of the property.

URLR - Energy Appraisal Addendum  
Energy Mortgage Pilot Form 70B - Freddie Mac; Energy Mortgage Pilot Form 1004C - Fannie Mae



**EnergySmart Home Scale**
  
**QUALIFICATION FORM: PERFORMANCE PATH**

**Third-Party Verifiers should complete form and submit to:**

**MAIL:** Builders Challenge, 3760 Tanglewood Lane, Davidsonville, MD 21035

**EMAIL:** builderschallenge@newportpartnersllc.com

**FAX:** 301-889-0019

ENERGY PERFORMANCE	
<b>HouseType</b> Single-family detached	<b>Building Plan Number</b>
<b>Year built</b> 2012 (Homes completed in 2007 or later may qualify if they meet the energy threshold and a third-party verifier can verify the Quality Criteria)	<b>Square footage of conditioned space</b> 3892.0
<b>Site address (if not available, list the site Lot#)</b> 8706 92nd Street NW Gig Harbor WA 98335	<b>Number of Bedrooms</b> 4
	<b>E-Scale Mailing Address (where E-Scale will be mailed)</b> Attn: Daimon Doyle PO Box 13049 Olympia, WA 98508 (360) 464-4046
<b>Registered Builder</b>	<b>Developer (if known)</b>
<b>Third Party Verifier</b> Viridian Northwest Daimon Doyle (360) 464-4046 ddoyle@hctc.com	<b>E-Scale Score/ HERS Index (70-0)</b> 57
	<b>Date of Rating</b> 6/21/2012
	<b>Identification number</b> WAHERS0030
	<b>Rating software (name and version used)</b> REM/Rate - v12.99
	<b>Estimated annual energy costs(\$)</b> 1950 Do you want this on the E-Scale? Yes No
	<b>Estimated average monthly energy cost (\$)</b> 162 Do you want this on the E-Scale? Yes No
<b>Estimated annual energy use</b> 19270 kWh (Electric)	<b>Estimated annual energy savings (relative to reference home)</b> 11052 kWh (Electric)
<b>Energy cost rates</b> 0.09 \$/kWh	<b>Estimated emissions reductions (relative to reference home)</b> 1.8 tons of Carbon Dioxide (CO2) 1.0 lbs of Sulfur Dioxide (SO2) 4.6 lbs of Nitrogen Oxides (NOx)

## QUALITY CRITERIA CHECKLIST

- ☐ As the Third-Party verifier for this house, I certify that the house complies with all the 'Required' Builders Challenge Quality Criteria, as defined by the Builders Challenge Quality Criteria Checklist

## ADDITIONAL INFORMATION

House will be certified under these programs (check all that apply):

- ☐ ENERGY STAR
- ☐ Environments for Living
- ☐ LEED for Homes
- ☐ National Green Building Standard

DRAFT























