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**ACTION REPORT**

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Building Name:	C.L.I. Group, Sample	Date:	October 13, 2007
Owner's Name:	J.Q. Smith	Builder's Name:	J.Q. Public Builders
Property	2342 Maybee Ave.	Weather Site:	Cleveland, OH
Address:	Cleveland, OH 44112	File Name:	HighEfficiency.blg

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The following table identifies and ranks energy use and cost by building component. A maximum of six components are shown. Current mechanical equipment is assumed for this analysis. To determine the impact of varying the equipment efficiency, change the equipment specified in the building file and perform the energy calculations again.

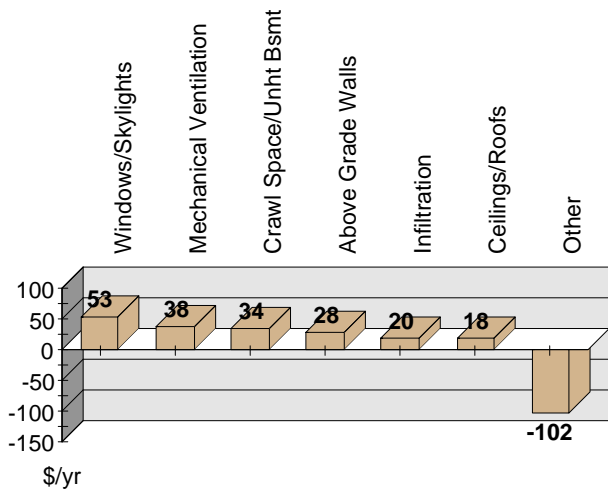
**ANNUAL ENERGY PROFILE**

Energy End-Use	Component	Consumption (MMBtu/yr)	Cost (\$/yr)
HEATING	Windows/Skylights	9.4	\$ 53
	Mechanical Ventilation	6.7	\$ 38
	Crawl Space/Unht Bsmt	6.0	\$ 34
	Above Grade Walls	4.9	\$ 28
	Infiltration	3.6	\$ 20
	Ceilings/Roofs	3.2	\$ 18
	Other	-18.0	\$ -102
	Total	15.8	\$ 89
COOLING	Internal Gains	4.7	\$ 111
	Windows/Skylights	0.3	\$ 8
	Sunspace	0.1	\$ 2
	Ceilings/Roofs	0.0	\$ 1
	Other	-2.3	\$ -54
	Total	2.9	\$ 67
WATER HEATING	Water Heater	11.9	\$ 60
LIGHTS & APPLIANCES	Lights & Appliances	34.3	\$ 804
PHOTOVOLTAICS	Photovoltaics	-4.1	\$ -96

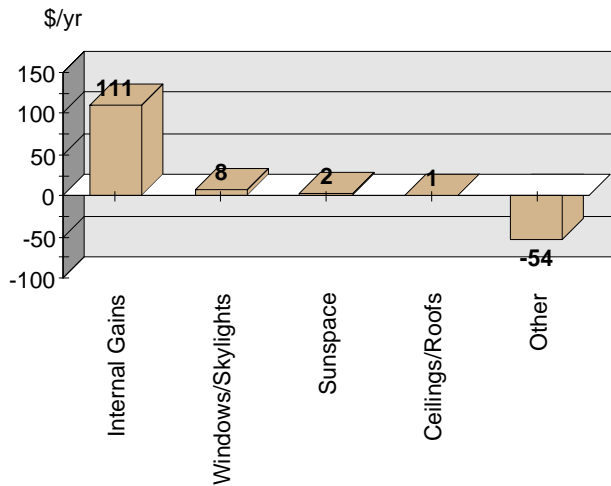
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Owner's Name:	J.Q. Smith	Builder's Name:	J.Q. Public Builders
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Address:	Cleveland, OH 44112	File Name:	HighEfficiency.blg

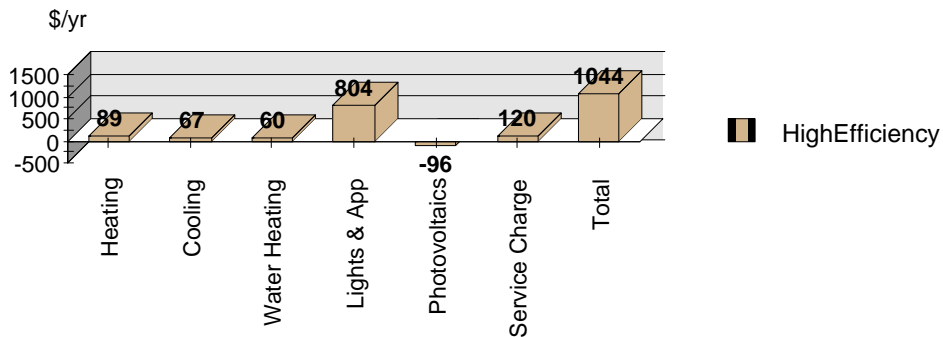
**Heating Cost (\$/yr)**



**Cooling Cost (\$/yr)**



**Annual Energy Cost**



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**AIR LEAKAGE REPORT**

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Building Name:	C.L.I. Group, Sample	Date:	October 13, 2007
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Property	2342 Maybee Ave.	Weather Site:	Cleveland, OH
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**Whole House Infiltration**

	Blower door test	
	<i>Heating</i>	<i>Cooling</i>
Natural ACH:	0.05	0.05
ACH @ 50 Pascals:	0.76	0.96
CFM @ 25 Pascals:	193	246
CFM @ 50 Pascals:	303	386
Eff. Leakage Area:	16.6	21.2
Specific Leakage Area:	0.00004	0.00005
ELA/100 sf shell:	0.40	0.50

**Total Duct Leakage to Outside**

CFM @ 25 Pascals:	91
CFM25 / CFMfan:	0.0757
CFM25 / CFA:	0.0303
CFM per Std 152:	69
CFM per Std 152 / CFA:	0.0229
CFM @ 50 Pascals:	143
Eff. Leakage Area:	7.83
Thermal Efficiency:	N/A

**Ventilation**

Mechanical:	Balanced
Sensible Recovery Eff. (%):	50.0
Total Recovery Eff. (%):	40.0
Rate (cfm):	200
Hours/Day:	9.0
Fan Watts:	50.0
Cooling Ventilation:	Natural Ventilation

**ASHRAE 62.2 - 2003 Ventilation Requirements**

For this home to comply with ASHRAE Standard 62.2 - 2003 Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings, a minimum of 75 cfm of mechanical ventilation must be provided continuously, 24 hours per day. Alternatively, an intermittently operating mechanical ventilation system may be used if the ventilation rate is adjusted accordingly. For example, a 150 cfm mechanical ventilation system would need to operate 12 hours per day, as long as the system operates to provide required average ventilation once each hour.

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**BUILDING FILE REPORT**

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File Name: HighEfficiency.blg

Date: October 13, 2007

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**Property/Builder:**

Building Name: C.L.I. Group, Sample  
 Owner's Name: J.Q. Smith  
 Prop. Address: 2342 Maybee Ave.  
 City,St,Zip: Cleveland, OH 44112  
 Phone No: 440-946-7191

Bldr's Name: J.Q. Public Builders  
 Model: The Tight Building  
 Development: Erie View  
 Phone No: 216 111 2222

**General Building Information**

Area of Cond. Space(sq ft): 3000  
 Floors on or Above-Grade: 2  
 Volume of Cond. Space: 24000  
 Number of Bedrooms: 5  
 Housing Type: Single-family detached  
 Level Type(Apartments Only): None  
 Foundation Type: Enclosed crawl space  
 Enclosed Crawl Space Type: Unvented

**Foundation Wall Info:**

1

Name	Crawlsp Wall
Library Type	R-19 Draped, Full
Length(ft)	145.0
Total Height(ft)	4.0
Depth Below Grade(ft)	1.0
Height Above Grade(ft)	3.0
Location	Enclsd crwl->amb/grnd
Uo Value	0.048

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BUILDING FILE REPORT

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**Foundation Wall: R-19 Draped, Full**

Type: Solid concrete or stone  
Thickness(in): 6.0  
Studs: None

Interior Insulation:

Continuous R-Value: 19.0  
Frame Cavity R-Value: 0.0  
Cavity Insulation Grade: 3.0  
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:

Frame Floor Info:	1		
Name	Frame Floor		
Library Type	R-30		
Area (sq ft)	1500		
Location	Btwn cond & enclsd crwl		
Uo Value	0.045		

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BUILDING FILE REPORT

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**Frame Floor: R-30**

Information From Quick Fill Screen:

Continous Insulation R-Value	0.0
Cavity Insulation R-Value	30.0
Cavity Insulation Thickness (in.)	10.0
Cavity Insulation Grade	3.0
Joist Size (w x h, in)	1.5 x 11.5
Joist Spacing (in oc)	16.0
Framing Factor - (default)	0.1300
Floor Covering	CARPET

Note:

Layers	Paths		
	Cavity	Framing	Grade
Inside Air Film	0.920	0.920	0.920
Floor covering	1.230	1.230	1.230
Subfloor	0.820	0.820	0.820
Cavity ins	30.000	0.000	0.000
Continuous ins	0.000	0.000	0.000
Framing	0.000	12.500	0.000
	0.000	0.000	0.000
Outside Air Film	0.920	0.920	0.920
Total R-Value	33.890	16.390	3.890
U-Value	0.030	0.061	0.257
Relative Area	0.820	0.130	0.050
UA	0.024	0.008	0.013

Total Component UA: 0.045

Total Component Area: 1.0

Component Uo: 0.045

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BUILDING FILE REPORT

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C.L.I. Group, Sample

Page 4

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<b>Rim and Band Joist:</b>	1		
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Name	Rim, Cond
Area(sq ft)	145.0
Continuous Ins	0.0
Framed Cavity Ins	24.0
Cavity Ins Thk(in)	5.5
Joist Spacing	16.0
Location	Cond -> ambient
Uo Value	0.044

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<b>Above-Grade Wall:</b>	1		
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Name	From SI
Library Type	R-22, R-10 Cont.
Gross Area(sq ft)	1061.30
Exterior Color	Light
Location	Cond -> ambient
Uo Value	0.036

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BUILDING FILE REPORT

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**Above-Grade Wall: R-22, R-10 Cont.**

Information From Quick Fill Screen:

Standard Wood Frame

Continuous Insulation (R-Value)	10.0
Frame Cavity Insulation (R-Value)	22.0
Frame Cavity Insulation Thickness (in)	5.5
Frame Cavity Insulation Grade	3
Stud Size (w x d, in)	1.5 x 5.5
Stud Spacing (in o.c.)	24.0
Framing Factor - (default)	0.1988
Gypsum Thickness (in)	0.5

Note:

Layers	Paths		
	Cavity	Framing	Grade
Inside Air Film	0.680	0.680	0.680
Gyp board	0.450	0.450	0.450
Air Gap/Frm	0.000	0.000	0.000
Cavity ins/Frm	22.000	6.875	1.030
Continuous ins	10.000	10.000	10.000
Ext Finish	0.940	0.940	0.940
	0.000	0.000	0.000
Outside Air Film	0.170	0.170	0.170
Total R-Value	34.240	19.115	13.270
U-Value	0.029	0.052	0.075
Relative Area	0.751	0.199	0.050
UA	0.022	0.010	0.004

Total Component UA: 0.036

Total Component Area: 1.0

Component Uo: 0.036

**BUILDING FILE REPORT**

<b>Window Information:</b>	1	2	3
Name			
Library Type	Triple - Vinyl	Triple - Vinyl	Triple - Vinyl
U-Value	0.360	0.360	0.360
SHGC	0.520	0.520	0.520
Area(sq ft)	55.00	25.00	65.00
Orientation	South	North	East
Overhang Depth	2.0	2.0	2.0
Overhang To Top	1.0	1.0	1.0
Overhang To Bottom	4.0	4.0	4.0
Interior Winter Shading	0.70	0.10	0.40
Interior Summer Shading	0.70	0.10	0.70
Adjacent Winter Shading	None	None	None
Adjacent Summer Shading	Most	None	Most
Wall Assignment	AGWall 1	AGWall 1	AGWall 1

<b>Window Information:</b>	4		
Name			
Library Type	Triple - Vinyl		
U-Value	0.360		
SHGC	0.520		
Area(sq ft)	55.00		
Orientation	West		
Overhang Depth	2.0		
Overhang To Top	1.0		
Overhang To Bottom	4.0		
Interior Winter Shading	0.40		
Interior Summer Shading	0.70		
Adjacent Winter Shading	None		
Adjacent Summer Shading	Most		
Wall Assignment	AGWall 1		

<b>Window: Triple - Vinyl</b>	
U-Value:	0.360
Solar Heat Gain Coefficient:	0.520
Note:	

<b>Door Information:</b>	1		
Name	AG Frame		
Opaque Area(sq ft)	40.0		
Library Type	Steel-urth w/brk		
Wall Assignment	AGWall 1		
Uo Value	0.187		

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BUILDING FILE REPORT

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**Door: Steel-urth w/brk**

R-Value of Opaque Area: 4.4  
Storm Door: No  
Note:

**Roof Information:**

1

Name	Attic
Library Type	R-50 Blown, Attic
Gross Area(sq ft)	1100.00
Color	Medium
Radiant Barrier	No
Type(Attic)	Attic
Uo Value	0.020

BUILDING FILE REPORT

**Ceiling: R-50 Blown, Attic**

Information From Quick Fill Screen:

Continous Insulation (R-Value)	37.0
Cavity Insulation (R-Value)	13.0
Cavity Insulation Thickness (in)	3.5
Cavity Insulation Grade	3.0
Gypsum Thickness (in)	0.500
Bottom Chord/Rafter Size(w x h, in)	1.5 x 3.5
Bottom Chord/Rafter Spacing (in o.c.)	24.0
Framing Factor - (default)	0.1100
Ceiling Type	Attic

Note:

Layers	Paths		
	Framing	Cavity	Grade
Inside Air Film	0.610	0.610	0.610
Gyp board	0.450	0.450	0.450
Cavity Ins/Frm	4.375	13.000	0.000
Continuous ins	37.000	37.000	37.000
	0.000	0.000	0.000
	0.000	0.000	0.000
	0.000	0.000	0.000
Outside Air Film	0.610	0.610	0.610
Total R-Value	43.045	51.670	38.670
U-Value	0.023	0.019	0.026
Relative Area	0.110	0.840	0.050
UA	0.003	0.016	0.001

Total Component UA: 0.020

Total Component Area: 1.0

Component Uo: 0.020

**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

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BUILDING FILE REPORT

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**Heat: 92AFUE Gas Furn 32k**

SystemType: Fuel-fired air distribution  
Fuel Type: Natural gas  
Rated Output Capacity (kBtuh): 32.0  
Seasonal Equipment Efficiency: 92.0 AFUE  
Auxiliary Electric: 262 Eae  
Note:  
Location: Conditioned area  
Performance Adjustment: 100  
Percent Load Served: 100  
Number Of Units: 1

**Cooling Equipment: 14SEER A/C 3 ton**

System Type: Air conditioner  
Fuel Type: Electric  
Rated Output Capacity (kBtuh): 36.0  
Seasonal Equipment Efficiency: 14.0 SEER  
Sensible Heat Fraction (SHF): 0.70  
Note:  
Location: Ambient  
Performance Adjustment: 100  
Percent Load Served: 100  
Number Of Units: 1

**Water Heating Equipment: Demand-Gas 0.80EF**

Water Heater Type: Instant water heater  
Fuel Type: Natural gas  
Energy Factor: 0.80  
Recovery Efficiency: 0.00  
Water Tank Size (gallons): 0  
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: 0.05 Natural ACH  
 Cooling Season Infiltration Value: 0.05 Natural ACH

Mechanical Ventilation for IAQ

Type: Balanced  
 Rate(cfm): 200  
 Sensible Recovery Efficiency(%): 50.00  
 Total Recovery Efficiency(%): 40.00  
 Hours per Day: 9.00  
 Fan Power (watts): 50.00

Ventilation Strategy for Cooling

Cooling Season Ventilation: Natural Ventilation

**Lights and Appliances**

Simplified Audit

Oven/Range Fuel Type: Electric  
 Clothes Dryer Fuel Type: Electric  
 Percent Fluorescent - Pin-Based: 15.00  
 Percent Fluorescent - CFL: 15.00  
 Refrigerator KWh: 700  
 Dishwasher EF: 0.50  
 Ceiling Fan CFM / Watt: 70.40

**Added Mass:** Drywall Thickness(in): 0.50

<b>Added Mass Info:</b>		1		
Name		Water Wall		
Type		Water		
Area(sq ft)		120.0		
Thickness(in)		24.0		
Location		Wall in sunlit room		

**Active Solar**

System Type: DHW heating only  
 Loop Type: Liquid, direct  
 Type: Single glazing, selective  
 Orientation: South  
 Area(sq ft): 24.0  
 Tilt(degrees): 40.0  
 Volume(cu ft/gal): 100.0

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BUILDING FILE REPORT

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**Photovoltaic System**

Collector Type:	Monocrystalline Silicon
Collector Orientation:	South
Collector Area(sq ft):	100.0
PV Panel Peak Power(Watts):	1000.0
Collector Tilt(degrees):	40.0
Inverter Efficiency(%):	95.0

**Sunspace Roof and Walls**

Sunspace Roof Area(sq ft):	750.0
Roof Insulation(R-Value):	42.0
Sunspace Exterior Wall Area(sq ft):	640.0
Exterior Wall Insulation(R-Value):	24.0
Sunspace Subgrade Wall Area(sq ft):	0.0
Subgrade Wall Insulation(R-Value):	0.00

**Sunspace Common Wall:**

1

Name	Common Wall
Area(sq ft)	400.0
Mass Type	Concrete
Mass Thickness(in)	24.0
Insulation(R-Value)	10.0
Auto. Fan Coupling	Yes
Fan Flow Rate	200

**Sunspace Floor**

Floor Area(sq ft):	750.0
Frame Floor	
FrameFloor Insulation(R-Value):	0.0
Slab Floor	
Exposed Slab Perimeter(ft):	80.0
Slab Depth Below Grade(ft):	0.00
Slab Thickness(in):	12.0
Perimeter Insulation(R-Value):	8.0
Under Slab Insulation(R-Value):	0.0



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COMPONENT CONSUMPTION SUMMARY

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Owner's Name:	J.Q. Smith	Builder's Name:	J.Q. Public Builders
Property	2342 Maybee Ave.	Weather Site:	Cleveland, OH
Address:	Cleveland, OH 44112	File Name:	HighEfficiency.blg

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**C.L.I. Group, Sample**

**HEATING SEASON (MMBtu/yr)**

Ceilings/Roofs	3.2
Rim/Band Joists	1.1
Above Grade Walls	4.9
Foundation Walls	0.0
Doors	1.3
Windows/Skylights	9.4
Frame Floors	0.0
Crawl Space/Unht Bsmt	6.0
Slab Floors	0.0
Infiltration	3.6
Mechanical Ventilation	6.7
Ducts	0.0
Active Solar	-0.0
Sunspace	0.5
Internal Gains	-20.9
<b>Total</b>	<b>15.8</b>

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COMPONENT CONSUMPTION SUMMARY

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C.L.I. Group, Sample

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**C.L.I. Group, Sample**

**COOLING SEASON (MMBtu/yr)**

Ceilings/Roofs	0.0
Rim/Band Joists	-0.0
Above Grade Walls	-0.1
Foundation Walls	0.0
Doors	-0.0
Windows/Skylights	0.3
Frame Floors	0.0
Crawl Space/Unht Bsmt	-0.2
Slab Floors	0.0
Infiltration	-0.1
Mechanical Ventilation	-0.2
Ducts	0.0
Active Solar	0.0
Sunspace	0.1
Internal Gains	4.7
Whole House Ventilation	-1.7
<b>Total</b>	<b>2.9</b>

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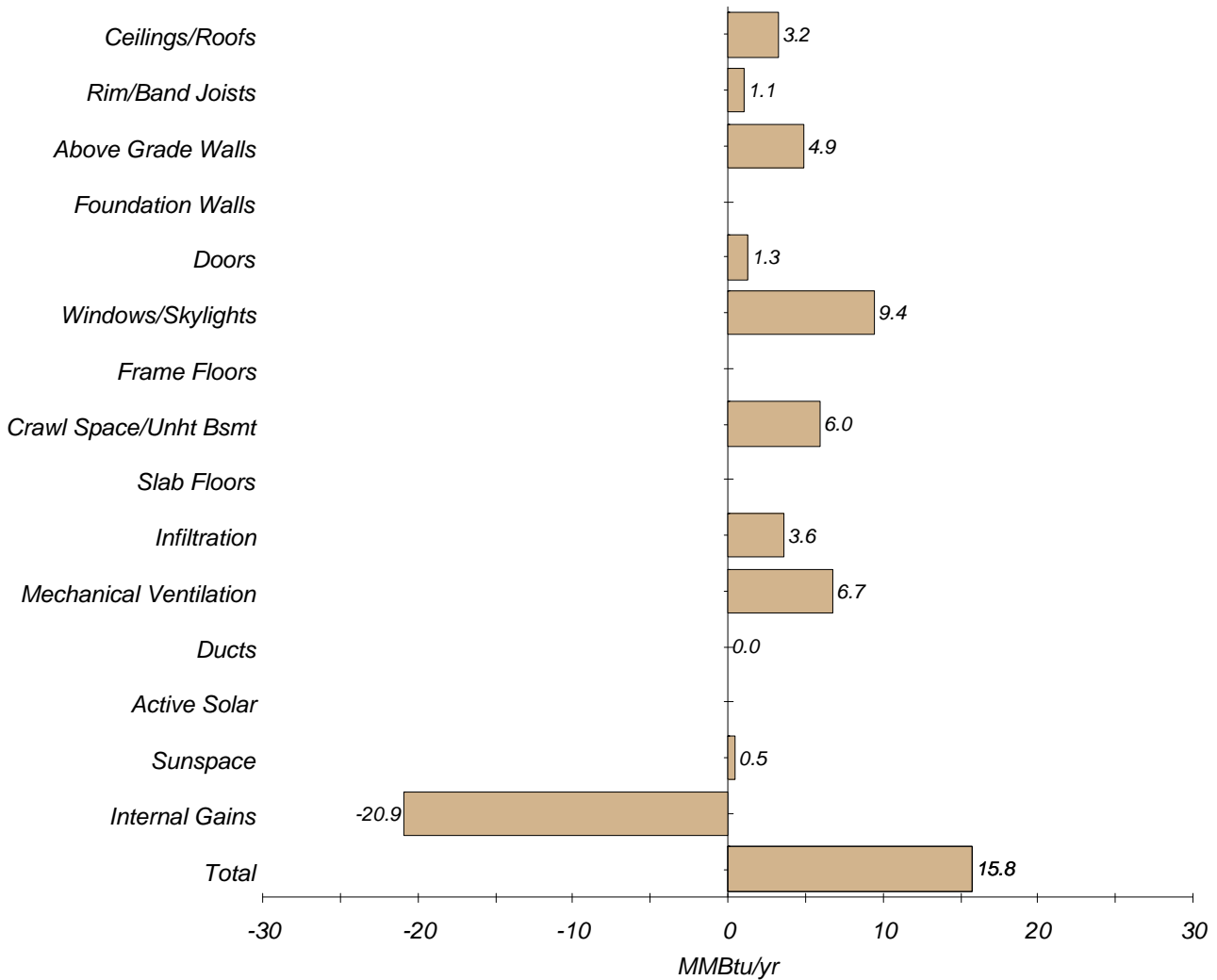
COMPONENT CONSUMPTION SUMMARY

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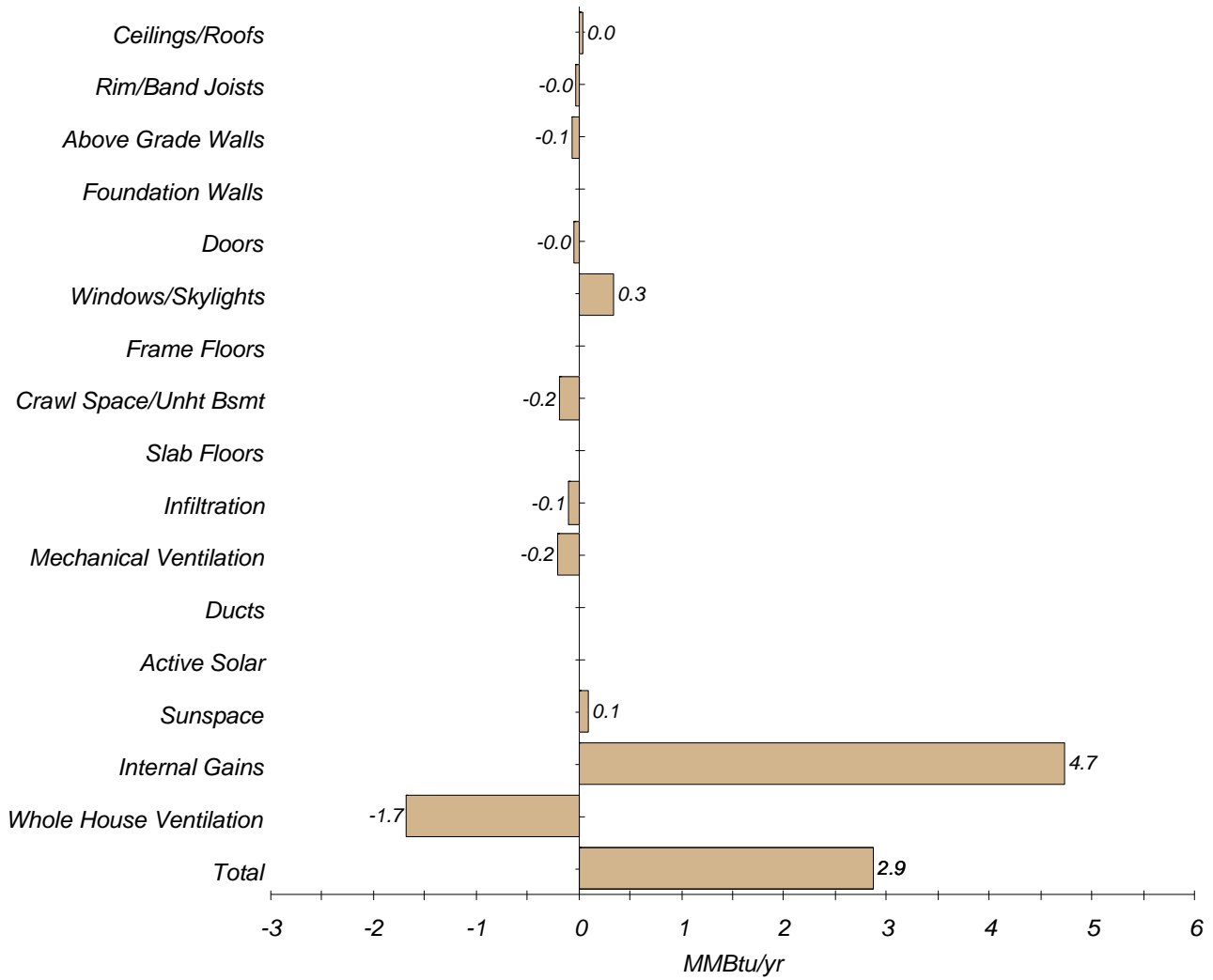
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Property Address:	2342 Maybee Ave. Cleveland, OH 44112	Weather Site:	Cleveland, OH
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**Heating Season**



### Cooling Season



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COMPONENT LOAD SUMMARY

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**C.L.I. Group, Sample**

**HEATING SEASON (MMBtu/yr)**

Ceilings/Roofs	2.9
Rim/Band Joists	1.0
Above Grade Walls	4.3
Foundation Walls	0.0
Doors	1.1
Windows/Skylights	8.4
Frame Floors	0.0
Crawl Space/Unht Bsmt	5.3
Slab Floors	0.0
Infiltration	3.2
Mechanical Ventilation	6.0
Ducts	0.0
Active Solar	-0.0
Sunspace	0.5
Internal Gains	-18.6
<b>Total</b>	<b>14.0</b>

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COMPONENT LOAD SUMMARY

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C.L.I. Group, Sample

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**C.L.I. Group, Sample**

**COOLING SEASON (MMBtu/yr)**

Ceilings/Roofs	0.1
Rim/Band Joists	-0.1
Above Grade Walls	-0.2
Foundation Walls	0.0
Doors	-0.1
Windows/Skylights	1.2
Frame Floors	0.0
Crawl Space/Unht Bsmt	-0.7
Slab Floors	0.0
Infiltration	-0.4
Mechanical Ventilation	-0.7
Ducts	0.0
Active Solar	0.0
Sunspace	0.3
Internal Gains	16.8
Whole House Ventilation	-6.0
<b>Total</b>	<b>10.2</b>

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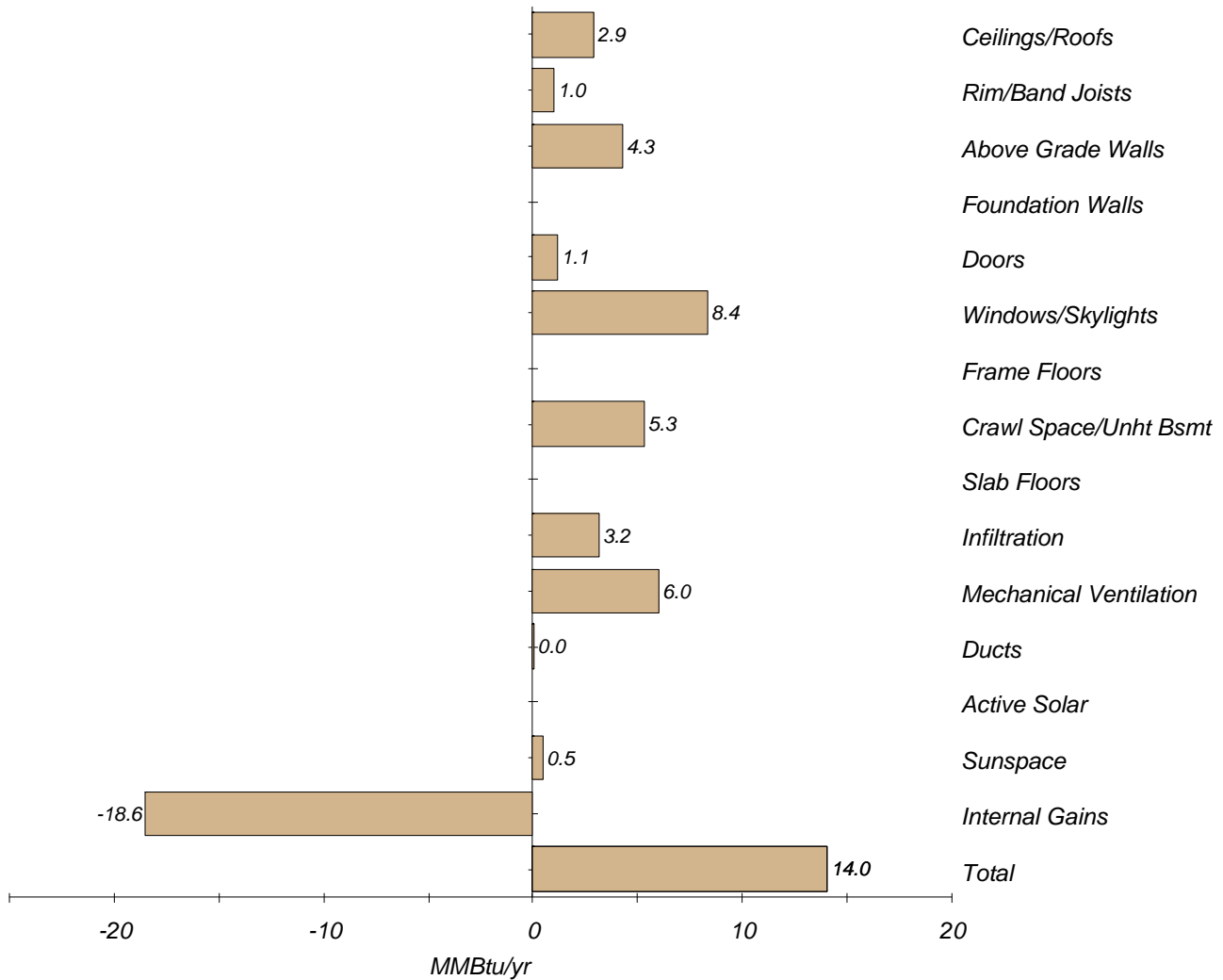
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**Heating Season**

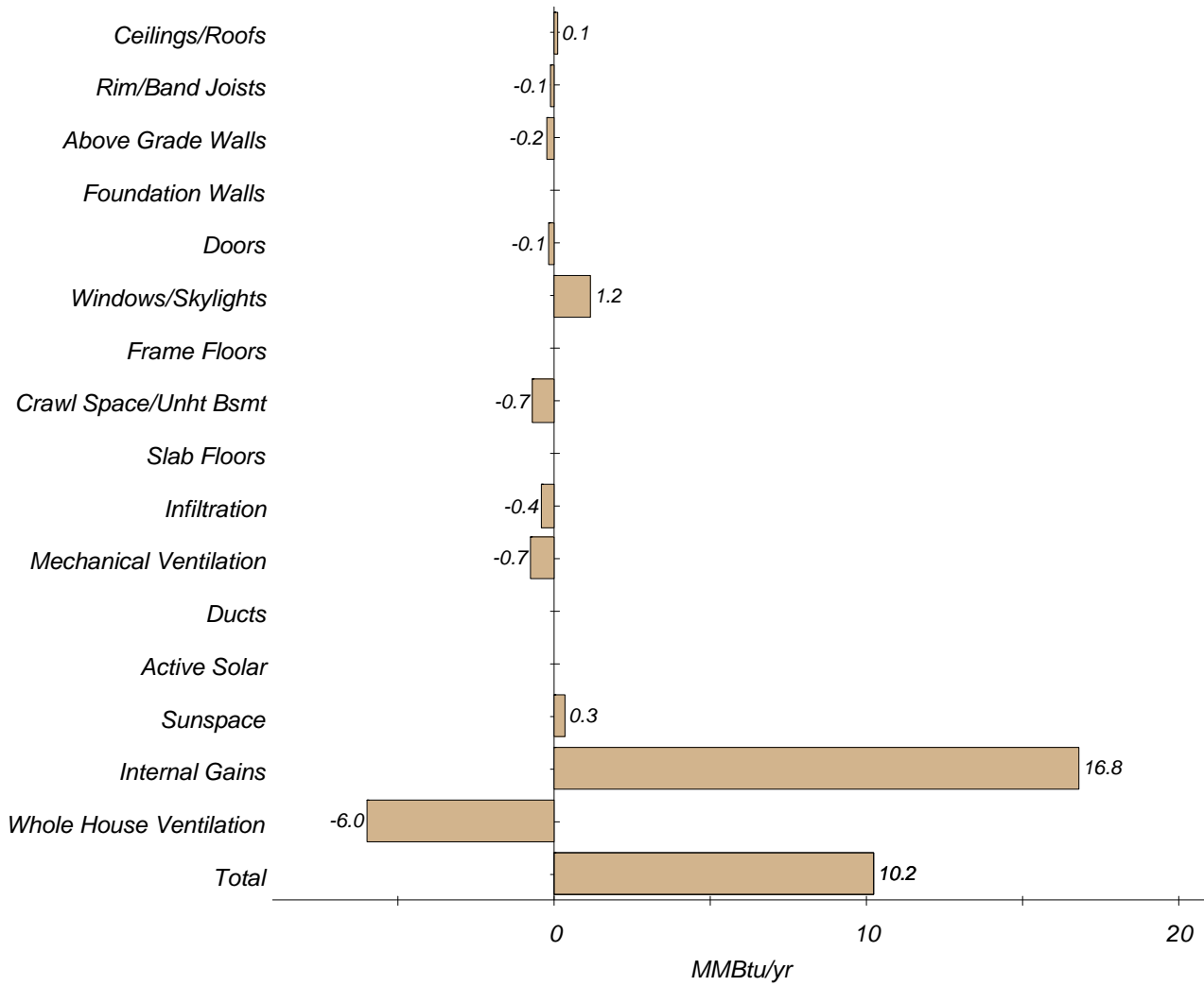


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COMPONENT LOAD SUMMARY

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**Cooling Season**





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COMPONENT DESIGN LOAD SUMMARY

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Property Address:	2342 Maybee Ave. Cleveland, OH 44112	Weather Site:	Cleveland, OH
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**C.L.I. Group, Sample**

**HEATING (KBtu/Hr)**

Ceilings/Roofs	1.3
Rim/Band Joists	0.4
Above Grade Walls	1.9
Foundation Walls	0.0
Doors	0.5
Windows/Skylights	4.6
Frame Floors	0.0
Crawl Space/Unht Bsmt	2.3
Slab Floors	0.0
Infiltration	1.3
Mechanical Ventilation	2.5
Ducts	0.0
Active Solar	0.0
Sunspace	1.9
Internal Gains	0.0
<b>Total</b>	<b>16.8</b>

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COMPONENT DESIGN LOAD SUMMARY

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C.L.I. Group, Sample

Page 2

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**C.L.I. Group, Sample**

**COOLING (KBtu/Hr)**

Ceilings/Roofs	0.7
Rim/Band Joists	0.1
Above Grade Walls	0.4
Foundation Walls	0.0
Doors	0.1
Windows/Skylights	2.3
Frame Floors	0.0
Crawl Space/Unht Bsmt	0.5
Slab Floors	0.0
Infiltration	0.7
Mechanical Ventilation	1.3
Ducts	0.0
Active Solar	0.0
Sunspace	0.7
Internal Gains	6.7
Whole House Ventilation	0.0
<b>Total</b>	<b>13.5</b>

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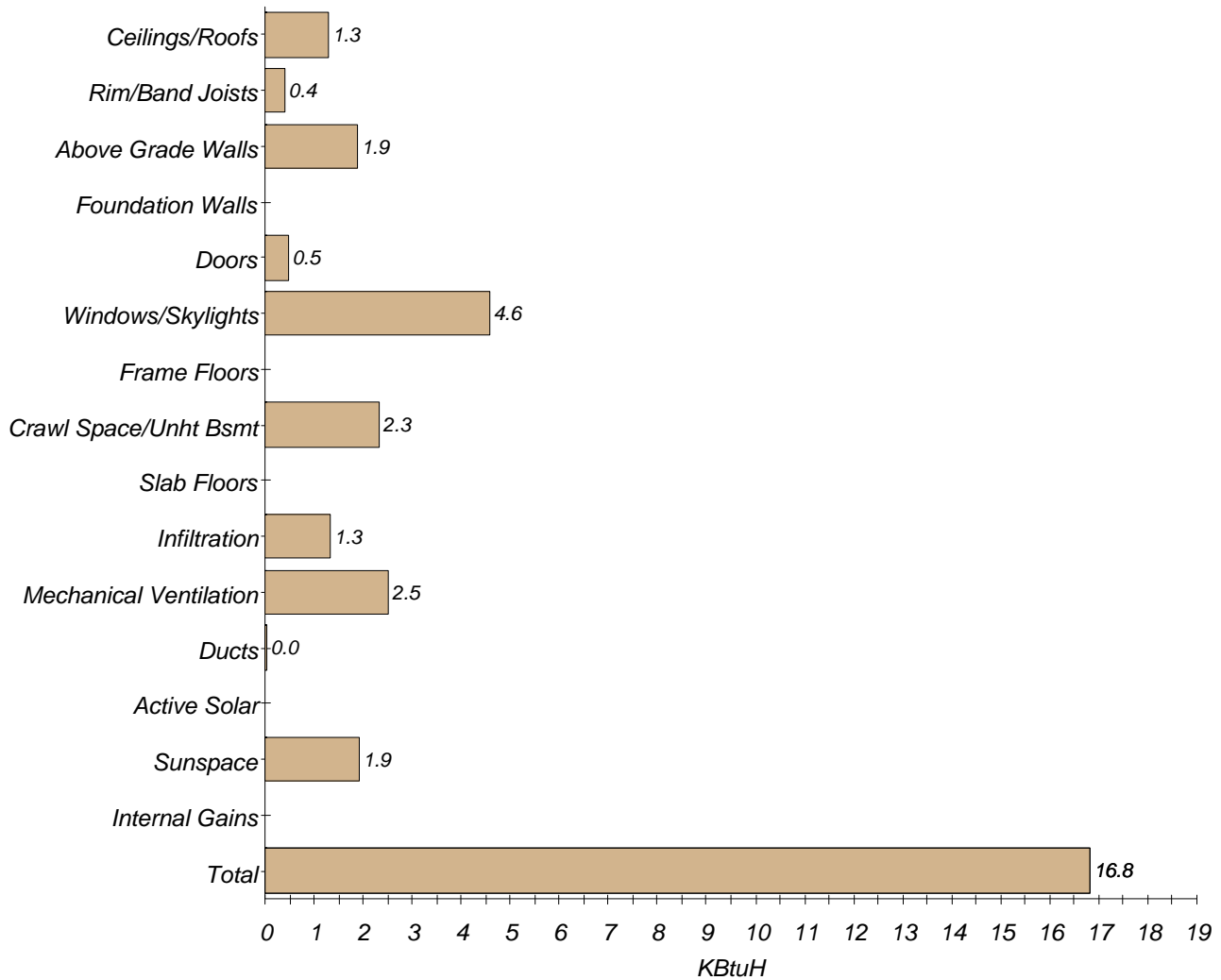
COMPONENT DESIGN LOAD SUMMARY

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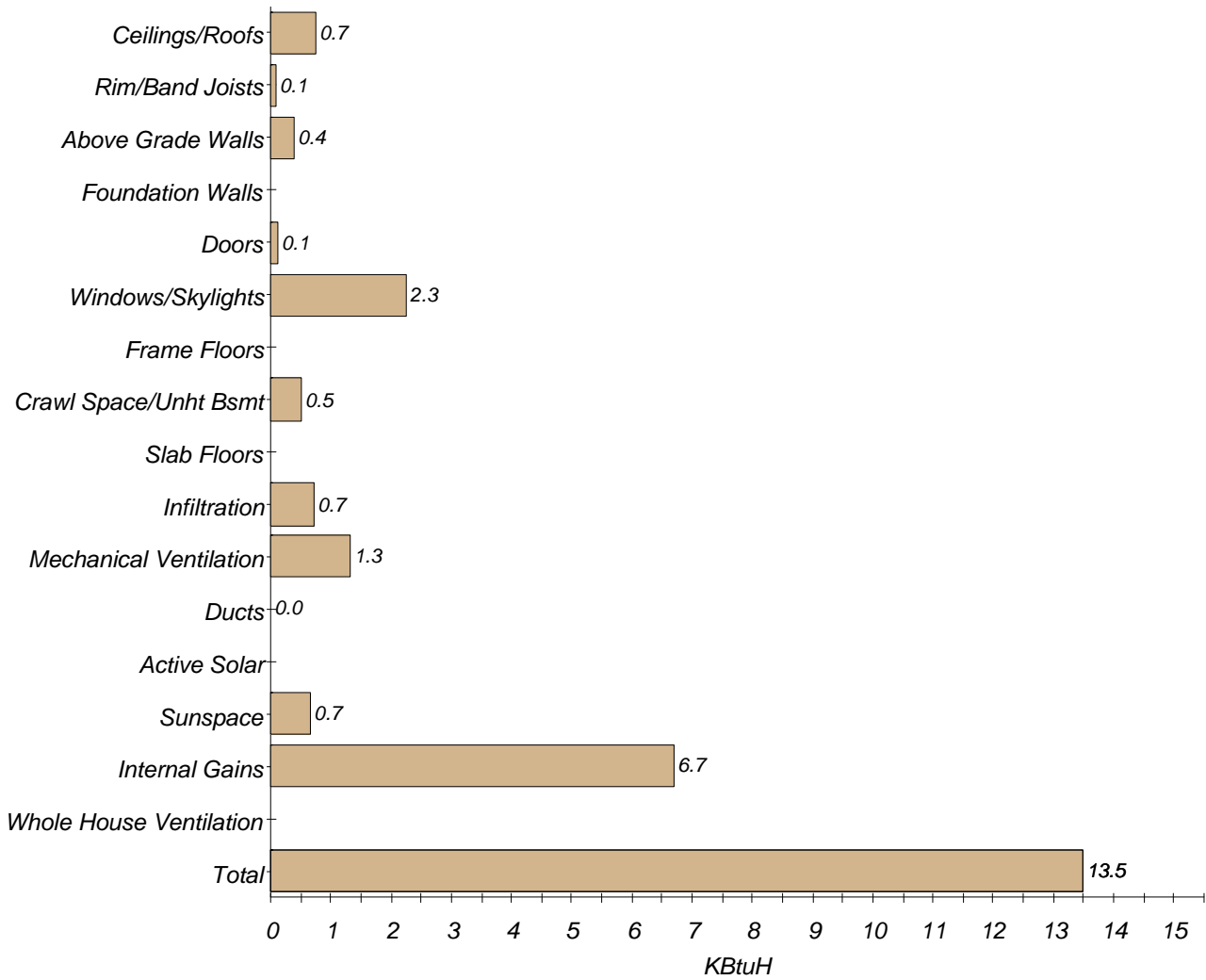
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**Heating**



### Cooling



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FUEL SUMMARY

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Building Name:	C.L.I. Group, Sample	Date:	October 13, 2007
Owner's Name:	J.Q. Smith	Builder's Name:	J.Q. Public Builders
Property Address:	2342 Maybee Ave. Cleveland, OH 44112	Weather Site:	Cleveland, OH
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**C.L.I. Group, Sample**

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

Natural gas	\$	136
Electric	\$	761

**Annual End-Use Cost (\$/yr)**

Heating	\$	89
Cooling	\$	67
Water Heating	\$	60
Lights & Appliances	\$	804
Photovoltaics	\$	-96
Service Charges	\$	120
Total	\$	1044

**Annual End-Use Consumption**

Heating (Therms)	152
Heating (kWh)	167
Cooling (kWh)	843
Water Heating (Therms)	119
Lights & Appliances (kWh)	10045
Photovoltaics (kWh)	-1199

**Utility Rates:**

Electricity:	Default Electric Provider
Gas:	Default Gas Provider

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**ENERGY COST AND FEATURE REPORT**

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Building Name:	C.L.I. Group, Sample	Date:	October 13, 2007
Owner's Name:	J.Q. Smith	Builder's Name:	J.Q. Public Builders
Property	2342 Maybee Ave.	Weather Site:	Cleveland, OH
Address:	Cleveland, OH 44112	File Name:	HighEfficiency.blg

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**C.L.I. Group, Sample**

**ANNUAL ENERGY COSTS**

Heating	\$	89
Cooling	\$	67
Water Heating	\$	60
Lights & Appliances	\$	804
Photovoltaics	\$	-96
Service Charges	\$	120
Total	\$	1044
Average Monthly	\$	87

**ENERGY FEATURES**

Ceiling w/Attic:	R-50 Blown, Attic U=0.020
Vaulted Ceiling:	None
Above Grade Walls:	R-22, R-10 Cont. U=0.036
Foundation Walls (Cond):	None
Found. Walls (Uncond):	R-19 Draped, Full R=19.0
Doors:	Steel-urth w/brk U=0.187
Windows:	Triple - Vinyl U=0.360
Frame Floors:	R-30 U=0.045
Slab Floors:	None
Infiltration:	Htg: 0.05 Clg: 0.05 ACHnat
Infilt. Measure:	Blower door test
Mechanical Ventilation:	Balanced: HRV, 200 cfm, 50.0 watts.
Interior Mass:	Water
Mech Equip List:	Heating: Fuel-fired air distribution, 32.0 kBtuh, 92.0 AFUE.  Cooling: Air conditioner, 36.0 kBtuh, 14.0 SEER. Water Heating: Instant water heater, Gas, 0.80 EF.
Programmable Thermostat:	Heat=Yes; Cool=Yes
Ducts:	R-2.0 Conditioned space
Duct Leakage:	68.66 CFM per Std 152
Lights/Appliances:	Defaults

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ENERGY COST AND FEATURE REPORT

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C.L.I. Group, Sample

Page 2

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Active Solar:	DHW heating only
Photovoltaics:	Monocrystalline Silicon
Sunspace:	Yes

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

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**EQUIPMENT SIZING SUMMARY**

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Building Name:	C.L.I. Group, Sample	Date:	October 13, 2007
Owner's Name:	J.Q. Smith	Builder's Name:	J.Q. Public Builders
Property	2342 Maybee Ave.	Weather Site:	Cleveland, OH
Address:	Cleveland, OH 44112	File Name:	HighEfficiency.blg

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**C.L.I. Group, Sample**

**HEATING**

Calculated Peak Load (kBtu/hr)	16.8
Oversize Factor (%)	100.0

HEATING EQUIPMENT CAPACITY (kBtu/hr)

Required	16.8
Specified	32.0

**COOLING**

Calculated Peak Load (kBtu/hr)	13.5
Sensible	10.0
Latent	3.5
Oversize Factor (%)	100.0

COOLING EQUIPMENT CAPACITY (kBtu/hr)

Required Total	13.5
Specified Total	36.0

Required Sensible	9.96
Specified Sensible	25.20

Required Latent	3.53
Specified Latent	10.80

**Notes:**

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LIGHTS AND APPLIANCES SUMMARY

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Building Name:	C.L.I. Group, Sample	Date:	October 13, 2007
Owner's Name:	J.Q. Smith	Builder's Name:	J.Q. Public Builders
Property	2342 Maybee Ave.	Weather Site:	Cleveland, OH
Address:	Cleveland, OH 44112	File Name:	HighEfficiency.blg

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**C.L.I. Group, Sample**

**Electric Consumption (kWh/yr)**

Lighting	2484.7
Refrigerator	700.0
Freezer	0.0
Dishwasher	186.3
Oven/Range	547.5
Clothes Washer	150.0
Clothes Dryer	1500.0
Mechanical Ventilation Fan	164.3
Ceiling Fan	277.4
Other	4037.9
<b>Total</b>	<b>10048.1</b>

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

Lighting	\$	199
Refrigerator	\$	56
Freezer	\$	0
Dishwasher	\$	15
Oven/Range	\$	44
Clothes Washer	\$	12
Clothes Dryer	\$	120
Mechanical Ventilation Fan	\$	13
Ceiling Fan	\$	22
Other	\$	323
<b>Total</b>	<b>\$</b>	<b>804</b>

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PERFORMANCE SUMMARY

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Building Name:	C.L.I. Group, Sample	Date:	October 13, 2007
Owner's Name:	J.Q. Smith	Builder's Name:	J.Q. Public Builders
Property	2342 Maybee Ave.	Weather Site:	Cleveland, OH
Address:	Cleveland, OH 44112	File Name:	HighEfficiency.blg

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**C.L.I. Group, Sample**

**Annual Load (MMBtu/yr)**

Heating	14.0
Cooling	10.2
Water Heating	9.5

**Annual Consumption (MMBtu/yr)**

Heating	15.8
Cooling	2.9
Water Heating	11.9
Lights & Appliances	34.3
Photovoltaics	-4.1
Total	60.8

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

Heating	\$	89
Cooling	\$	67
Water Heating	\$	60
Lights & Appliances	\$	804
Photovoltaics	\$	-96
Service Charges	\$	120
Total	\$	1044

**Design Loads (kBtu/hr)**

Space Heating	16.8
Space Cooling	13.5

**Utility Rates:**

Electricity:	Default Electric Provider
Gas:	Default Gas Provider



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PERFORMANCE SUMMARY

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Building Name: C.L.I. Group, Sample

Date: October 13, 2007

Owner's Name: J.Q. Smith  
Property: 2342 Maybee Ave.

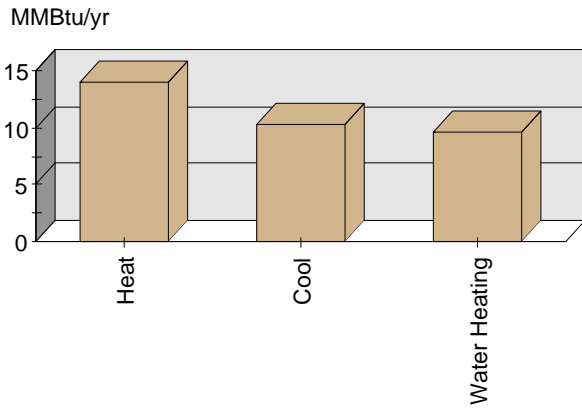
Builder's Name: J.Q. Public Builders  
Weather Site: Cleveland, OH

Address: Cleveland, OH 44112

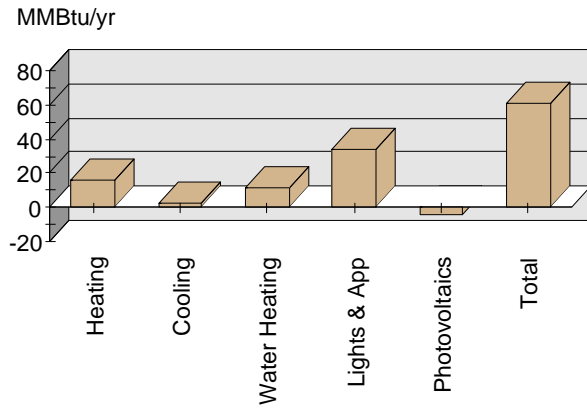
File Name: HighEfficiency.blg

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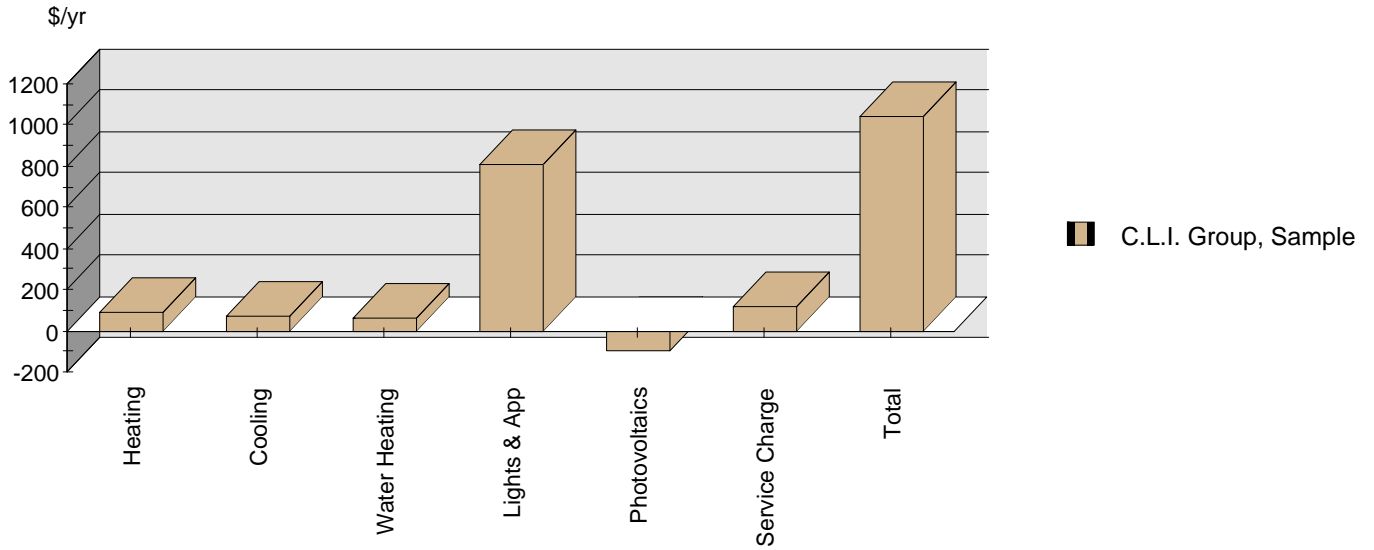
**Annual Load**



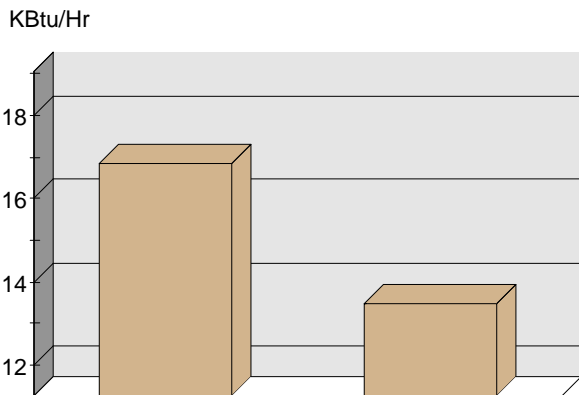
**Annual Consumption**



**Annual Energy Cost**



**Design Loads**



**Utility Rates:**

Electricity: Default Electric Provider  
Gas: Default Gas Provider

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PERFORMANCE FACTORS

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Building Name:	C.L.I. Group, Sample	Date:	October 13, 2007
Owner's Name:	J.Q. Smith	Builder's Name:	J.Q. Public Builders
Property	2342 Maybee Ave.	Weather Site:	Cleveland, OH
Address:	Cleveland, OH 44112	File Name:	HighEfficiency.blg

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**C.L.I. Group, Sample**

**Normalized Loads**

**(Btu/sf shell area/DD)**

Heating:	0.54
Cooling:	12.22

**Normalized Consumption**

**(kBtu/sf floor area/yr)**

Heating:	5.3
Cooling:	1.0
Lighting:	2.8
Appliances:	8.6
Photovoltaics:	-1.4

**(Btu/sf floor area/DD)**

Heating:	0.9
Cooling:	4.8

**Normalized Costs**

**(\$/sf floor area/yr)**

Heating:	\$	0.030
Cooling:	\$	0.022
Water Heating:	\$	0.020
Lighting:	\$	0.066
Appliances	\$	0.202
Photovoltaics	\$	-0.032
Total:	\$	0.288

**Normalized Design Loads**

**(Btuh/sf shell area/DD)**

Heating:	0.0006
Cooling:	0.0161

**Normalization Factors**

Floor Area:	3000
Shell Area:	4206
Heating Degree Days (B65):	6179

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PERFORMANCE FACTORS

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C.L.I. Group, Sample

Page 2

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Cooling Degree Days (B74):

199

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**SOURCE ENERGY & EMISSIONS REPORT**

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Building Name:	C.L.I. Group, Sample	Date:	October 13, 2007
Owner's Name:	J.Q. Smith	Builder's Name:	J.Q. Public Builders
Property Address:	2342 Maybee Ave.	Weather Site:	Cleveland, OH
Address:	Cleveland, OH 44112	File Name:	HighEfficiency.blg

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**Source Energy Consumption (MMBtu/year)**

	<i>All Electric</i>			
	<i>Reference Home</i>	<i>As Designed</i>	<i>Difference</i>	<i>% Difference</i>
Heating:	163.6	19.5	-144.2	-88.1%
Cooling:	29.6	13.4	-16.3	-54.9%
Water heating:	27.5	13.1	-14.4	-52.4%
Lights & Appliances:	134.4	127.4	-6.9	-5.2%
Photovoltaics:	0.0	-15.2	-15.2	
<b>Total:</b>	<b>355.1</b>	<b>158.2</b>	<b>-196.9</b>	<b>-55.5%</b>

**Total Emissions (lbs/year)**

	<i>All Electric</i>			
<i>Type of Emissions</i>	<i>Reference Home</i>	<i>As Designed</i>	<i>Difference</i>	<i>% Difference</i>
Carbon Dioxide (CO <sub>2</sub> )	59131.2	25214.2	-33916.9	-57.4%
Sulfur Dioxide (SO <sub>2</sub> )	592.1	231.0	-361.1	-61.0%
Nitrogen Oxides (NO <sub>x</sub> )	261.1	104.6	-156.6	-60.0%

**Emissions By End-Use (lbs/year)**  
*(All Electric Reference Home versus As Designed)*

	CO <sub>2</sub>		SO <sub>2</sub>		NO <sub>x</sub>	
	<i>Ref</i>	<i>Des</i>	<i>Ref</i>	<i>Des</i>	<i>Ref</i>	<i>Des</i>
Heating	28033.4	2259.1	295.7	4.0	128.5	4.1
Cooling	5076.0	2288.4	53.5	24.1	23.3	10.5
Water Heating	3001.0	1429.6	0.0	0.0	3.8	1.8
Lights & Appliances	23020.7	21832.7	242.8	230.3	105.6	100.1
Photovoltaics	0.0	-2595.5	0.0	-27.4	0.0	-11.9

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 energy multipliers and air emission data were taken from the USEPA E-GRID97 database.

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**EMISSIONS REPORT**

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Building Name:	C.L.I. Group, Sample	Date:	October 13, 2007
Owner's Name:	J.Q. Smith	Builder's Name:	J.Q. Public Builders
Property Address:	2342 Maybee Ave. Cleveland, OH 44112	Weather Site:	Cleveland, OH
		File Name:	HighEfficiency.blg

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**Total Emissions (lbs/year)**

*C.L.I. Group, Sample*

**Type of Emissions**

Carbon Dioxide (CO <sub>2</sub> )	24586.7
Sulfur Dioxide (SO <sub>2</sub> )	225.0
Nitrogen Oxides (NO <sub>x</sub> )	101.9

**Emissions By End-Use (lbs/year)**

*C.L.I. Group, Sample*

**Carbon Dioxide (CO<sub>2</sub>)**

Heating	2189.7
Cooling	1825.0
Water Heating	1429.6
Lights & Appliances	21737.9
Photovoltaics	-2595.5

**Sulfur Dioxide (SO<sub>2</sub>)**

Heating	3.8
Cooling	19.3
Water Heating	0.0
Lights & Appliances	229.3
Photovoltaics	-27.4

**Nitrogen Oxide (NO<sub>x</sub>)**

Heating	3.9
Cooling	8.4
Water Heating	1.8
Lights & Appliances	99.7
Photovoltaics	-11.9

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2005 EPACT ENERGY EFFICIENT HOME TAX CREDIT

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Building Name:	C.L.I. Group, Sample	Date:	October 13, 2007
Owner's Name:	J.Q. Smith	Builder's Name:	J.Q. Public Builders
Property Address:	2342 Maybee Ave. Cleveland, OH 44112	Weather Site:	Cleveland, OH
		File Name:	HighEfficiency.blg

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**Normalized, Modified End-Use Loads (MMBtu/year)**

	2004 IECC	
	50% Target	As Designed
Heating:	28.2	9.2
Cooling:	11.8	10.6
Total:	40.0	19.8

**Envelope Loads (MMBtu/year)**

	2004 IECC	
	90% Target	As Designed
Heating:	50.8	14.4
Cooling:	21.2	13.0
Total:	72.0	27.4

**This home MEETS the requirements for the residential energy efficiency tax credits under Section 1332, Credit for Construction of New Energy Efficient Homes, of the Energy Policy Act of 2005.**

As demonstrated above, this dwelling unit has a projected level of annual heating and cooling energy consumption that is at least 50% below the annual level of heating cooling energy consumption of a reference dwelling in the same climate zone, and the building envelope components improvements alone account for at least 10% of those savings. The projected heating and cooling energy savings above have been calculated in the manner prescribed in Section 2.02 of Notice 2006-27 of the Internal Revenue Service. Field inspections of the dwelling unit performed by the undersigned eligible certifier during and after the completion of construction have confirmed that all features of the home affecting such heating and cooling energy consumption comply with the design specifications provided to the undersigned certifier.

**Building Shell Features**

Ceiling Flat:	R-50	Slab:	None
Vaulted Ceiling:	NA	Duct:	R-2.0
Above Grade Walls:	R-32	Window:	U-Value = 0.360, SHGC = 0.520
Foundation Walls:	R-19.0	Heating:	Fuel-fired air distribution, Natural gas, 92.0 AFUE.
Exposed Floor:	R-30	Cooling:	Air conditioner, Electric, 14.0 SEER.

**This report provides information useful in determining whether the home qualifies for Energy Efficiency Tax Credits. Homes must be inspected and approved by a certified HERS rater in order to qualify.**

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ASHRAE 90.2 ENVELOPE COMPONENT COMPLIANCE

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Building Name:	C.L.I. Group, Sample	Date:	October 13, 2007
Owner's Name:	J.Q. Smith	Builder's Name:	J.Q. Public Builders
Property	2342 Maybee Ave.	Weather Site:	Cleveland, OH
Address:	Cleveland, OH 44112	File Name:	HighEfficiency.blg

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Elements	Insulation Levels		Load Change
	ASHRAE	Design	
Ceilings w/ Attics (U-Value):	0.036	0.020	2.976
Above-Grade Frame Walls (U-Value):	0.063	0.037	3.349
Floors Over Uncond. Space (U-Value):	0.047	0.045	0.107
Doors (U-Value):	0.190	0.187	0.014
Windows/Skylights (U-Value):	0.360	0.360	0.000
Windows/Skylights (Shading Coeff):	1.000	0.598	-0.643
			-----
Total Load Change (must be positive to comply):			5.803

This home MEETS the building envelope performance requirements of ASHRAE Standard 90.2 - 1993 based on 6179 heating degree-days and 4772 cooling degree-hours.

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Building Elements	Type	Uo	Area
Ceilings w/ Attics			
Roof	R-50 Blown, Attic	0.020	1100.0
Above-Grade Frame Walls			
Wall	R-22, R-10 Cont.	0.036	821.3
Joist	Rim, Cond	0.044	145.0
Floors Over Uncond. Space			
Floor	R-30	0.045	1500.0
Doors			
Door	Steel-urth w/brk	0.187	40.0
Windows/Skylights			
Window	Triple - Vinyl	0.360	55.0
Window	Triple - Vinyl	0.360	25.0
Window	Triple - Vinyl	0.360	65.0
Window	Triple - Vinyl	0.360	55.0

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ASHRAE 90.2 ANNUAL ENERGY CONSUMPTION COMPLIANCE

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Building Name:	C.L.I. Group, Sample	Date:	October 13, 2007
Owner's Name:	J.Q. Smith	Builder's Name:	J.Q. Public Builders
Property Address:	2342 Maybee Ave. Cleveland, OH 44112	Weather Site:	Cleveland, OH
		File Name:	HighEfficiency.blg

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**Annual Energy Cost**

	ASHRAE	As Designed
Heating:	363	85
Cooling:	110	89
Water Heating:	133	60
Lights & Appliances:	804	804
Photovoltaics:	-0	-96
Service Charge:	120	120
<b>Total:</b>	<b>1530</b>	<b>1061 *</b>

This home MEETS the annual energy cost requirements of ASHRAE Standard 90.2 - 1993 based on 6179 heating degree-days and 4772 cooling degree-hours. In fact, this home surpasses the requirements by 53.5%.

\* Design consumption is based on the following systems:  
 Heating: Fuel-fired air distribution, 32.0 kBtuh, 92.0 AFUE.  
 Cooling: Air conditioner, 36.0 kBtuh, 14.0 SEER.  
 Water Heating: Instant water heater, Gas, 0.80 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.



ENERGY STAR HOME REPORT

Building Name: C.L.I. Group, Sample Date: October 13, 2007
Owner's Name: J.Q. Smith Builder's Name: J.Q. Public Builders
Property: 2342 Maybee Ave. Weather Site: Cleveland, OH
Address: Cleveland, OH 44112 File Name: HighEfficiency.blg

Normalized, Modified End-Use Loads (MMBtu/year)
(Positive values are savings beyond the ENERGY STAR Home level)

Table with 2 columns: Category and Savings. Rows include Heating (38.8), Cooling (9.4), Water heating (8.8), Lighting & Appliances (-3.6), and Total (53.4).

ENERGY STAR Mandatory Requirements

Form with checkboxes for Thermal Bypass Inspection Checklist, Ductwork Requirements, ENERGY STAR Products, and ENERGY STAR Scoring Exceptions.

\* Thermal Bypass Checklist and ENERGY STAR Products are not checked in REM/Design at this time.

This home MEETS OR EXCEEDS the energy efficiency requirements for designation as an EPA ENERGY STAR Qualified Home.

Pollution Prevented

Energy Cost Savings (\$/year)

Table with 4 columns: Type of Emissions, Reduction (lb/year), Heating, and Energy Cost Savings (\$/year). Rows include Carbon Dioxide, Sulfur Dioxide, Nitrogen Oxides, and Total.

The energy savings and pollution prevented are calculated by comparing the Rated Home to the Reference Home as defined in the "Mortgage Industry National Home Energy Rating Systems Standards" as promulgated by the Residential Energy Services Network (RESNET).

This report provides information useful in designing or upgrading to energy efficiency levels required by the EPA Energy Star Homes program. It does not constitute nor substitute for an official home energy rating as provided by a certified HERS rater.



# ENERGY STAR REQUIREMENTS

## Thermal Bypass Inspection Checklist

Home Address: 2342 Maybee Ave. City: Cleveland State: OH

Thermal Bypass	Inspection Guidelines	Corrections Needed	Builder Verified	Rater Verified	NA
1. Overall Air Barrier and Thermal Barrier Alignment	<b>Requirements:</b> Insulation shall be installed in full contact with sealed interior and exterior air barrier except for alternate to interior air barrier under item no. 2 (Walls Adjoining Exterior Walls or Unconditioned Spaces)				
	<b>All Climate Zones:</b>				
	1.1 Overall alignment throughout home	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1.2 Garage band joist air barrier (at bays adjoining conditioned space)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1.3 Attic eave baffles where vents/leakage exist	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<b>Only at Climate Zones 4 and Higher</b>				
	1.4 Slab-edge insulation (A maximum of 25% of the slab edge may be uninsulated in Climate Zones 4 and 5.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<b>Best Practices Encouraged, Not Required</b>				
1.5 Air barrier at all band joists (Climate Zones 4 and higher)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.6 Minimize thermal bridging (e.g., OVE framing, SIPs, ICFs)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. Walls Adjoining Exterior Walls or Unconditioned Spaces	<b>Requirements:</b> <ul style="list-style-type: none"> <li>☐ Fully insulated wall aligned with air barrier at both interior and exterior, OR</li> <li>☐ Alternate for Climate Zones 1 thru 3, sealed exterior air barrier aligned with RESNET Grade 1 insulation fully supported</li> <li>☐ Continuous top and bottom plates or sealed blocking</li> </ul>				
	2.1 Wall Behind Shower/Tub	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	2.2 Wall Behind Fireplace	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	2.3 Insulated Attic Slopes/Walls	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	2.4 Attic Knee Walls	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	2.5 Skylight Shaft Walls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	2.6 Wall Adjoining Porch Roof	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	2.7 Staircase Walls	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	2.8 Double Walls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Floors between Conditioned and Exterior Spaces	<b>Requirements:</b> <ul style="list-style-type: none"> <li>☐ Air barrier is installed at any exposed insulation edges</li> <li>☐ Insulation is installed to maintain permanent contact with sub-floor above</li> <li>☐ Optional until July 1, 2008, insulation is installed to maintain permanent contact with air barrier below</li> </ul>				
	3.1 Insulated Floor Above Garage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	3.2 Cantilevered Floor	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Shafts	<b>Requirements:</b> Openings to unconditioned space are fully sealed with solid blocking or flashing and any remaining gaps are sealed with caulk or foam (provide fire-rated collars and caulking where required)				
	4.1 Duct Shaft	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	4.2 Piping Shaft/Penetrations	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.3 Flue Shaft	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5. Attic/ Ceiling Interface	<b>Requirements:</b> <ul style="list-style-type: none"> <li>☐ All attic penetrations and dropped ceilings include a full interior air barrier aligned with insulation with any gaps fully sealed with caulk, foam or tape</li> <li>☐ Movable insulation fits snug in opening and air barrier is fully gasketed</li> </ul>				
	5.1 Attic Access Panel (fully gasketed and insulated)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	5.2 Attic Drop-down Stair (fully gasketed and insulated)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	5.3 Dropped Ceiling/Soffit (full air barrier aligned with insulation)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	5.4 Recessed Lighting Fixtures (ICAT labeled and sealed to drywall)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	5.5 Whole-house Fan (insulated cover gasketed to the opening)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Common Walls Between Dwelling Units	<b>Requirements:</b> Gap btwn drywall shaft wall(common wall) and the structural framing btwn units is sealed at all exterior boundary conditions				
	6.1 Common Wall Between Dwelling Units	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rater Inspection Date:	<u>4/12/95</u>	Builder Inspection Date:			
Home Energy Rating Provider:	<u>H.I. Scorer</u>	Builder Company Name:	<u>J.Q. Public Builders</u>		
Home Energy Rating Company:	<u>L.A. Raters</u>	Builder Division Name:			
Home Energy Rating Signature:	_____	Builder Employee Signature:	_____		



# ENERGY STAR REQUIREMENTS Products Checklist

Home Address: 2342 Maybee Ave. City: Cleveland State: OH

Product	Verified
1. Heating or Cooling Equipment	NO
2. Windows	NO
3. Appliances	NO
4. Light Fixtures	NO
5. Ceiling Fan	NO
6. Ventilation Fans	NO

Rater Inspection Date: <u>4/12/95</u>	Builder Inspection Date: _____
Home Energy Rating Provider: <u>H.I. Scorer</u>	Builder Company Name: <u>J.Q. Public Builders</u>
Home Energy Rating Company: <u>L.A. Raters</u>	Builder Division Name: _____
Home Energy Rating Signature: _____	Builder Employee Signature: _____



## ENERGY STAR HOME VERIFICATION SUMMARY

Building Name:	C.L.I. Group, Sample	Date:	October 13, 2007
Owner's Name:	J.Q. Smith	Builder's Name:	J.Q. Public Builders
Property Address:	2342 Maybee Ave. Cleveland, OH 44112	Weather Site:	Cleveland, OH
		File Name:	HighEfficiency.blg

### Building Information

Conditioned Area (sq ft):	3000	Housing Type:	Single-family detached
Conditioned Volume (cubic ft):	24000	Foundation Type:	Enclosed crawl space
Insulated Shell Area (sq ft):	4206		
Number of Bedrooms:	5		

### Building Shell

Ceiling w/Attic:	R-50 Blown, Attic U=0.020	Window/Wall Ratio:	0.19
Vaulted Ceiling:	None	Window Type:	Triple - Vinyl
Above Grade Walls:	R-22, R-10 Cont. U=0.036	Window U-Value:	0.360
Found. Walls (Cond):	None	Window SHGC:	0.520
Found. Walls (Uncond):	R-19 Draped, Full R=19.0	Infiltration:	Htg: 0.05 Clg: 0.05 ACHnat
Frame Floors:	R-30 U=0.045	Measured Duct Leakage:	50.00 CFM25
Slab Floors:	None	Leakage to Outside:	68.66 CFM

### Mechanical Systems

Heating:	Fuel-fired air distribution, 32.0 kBtuh, 92.0 AFUE.
Cooling:	Air conditioner, 36.0 kBtuh, 14.0 SEER.
Water Heating:	Instant water heater, Gas, 0.80 EF.
Programmable Thermostat:	Heat=Yes; Cool=Yes

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

**This home MEETS OR EXCEEDS the EPA's requirements for an ENERGY STAR Home.**

**This report provides information useful in designing or upgrading to energy efficiency levels required by the EPA Energy Star Homes program. It does not constitute or substitute for an official home energy rating as provided by a certified HERS rater.**

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2006 IECC OVERALL BUILDING UA COMPLIANCE

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Elements	Insulation Levels	
	2006 IECC	As Designed
Shell UA Check		
Ceilings:	33.0	22.1
Above-Grade Walls:	58.0	36.0
Windows and Doors:	84.0	79.5
Floors Over Uncond Crawl Space:	49.5	67.5
Overall UA (Design must be lower):	224.5	205.1
Window U-Value Check (per Section 402.6)		
Window U-Value (Design must be lower):	0.480	0.360

This home MEETS the overall thermal performance requirements of the International Energy Conservation Code based on a climate zone of 5A. (Section 402, International Energy Conservation Code, 2006 edition.)

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Building Elements	Type	U-Value	Area
Ceilings			
Roof	R-50 Blown, Attic	0.020	1100.0
Above-Grade Walls			
Wall	R-22, R-10 Cont.	0.036	821.3
Joist	Rim, Cond	0.044	145.0
Windows and Doors			
Window	Triple - Vinyl	0.360	55.0
Window	Triple - Vinyl	0.360	25.0
Window	Triple - Vinyl	0.360	65.0
Window	Triple - Vinyl	0.360	55.0
Door	Steel-urth w/brk	0.187	40.0
Floors Over Uncond. Crawl Space			
Floor	R-30	0.045	1500.0

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2006 IECC ANNUAL ENERGY COST COMPLIANCE

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**Annual Energy Cost**

	2006 IECC	As Designed
Heating:	409	94
Cooling:	92	88
Water Heating:	124	60
Lights & Appliances:	814	807
Photovoltaics:	-0	-96
Service Charge:	120	120
<b>Total:</b>	<b>1560</b>	<b>1072 *</b>
Window U-Value Check (per Section 402.6)		
Window U-Value (Design must be lower):	0.480	0.360

This home **MEETS** the annual energy cost requirements in accordance with Section 404 of the 2006 International Energy Conservation Code based on a climate zone of 5A. In fact, this home surpasses the requirements by 31.2%.

\* Design energy cost is based on the following systems:  
 Heating: Fuel-fired air distribution, 32.0 kBtuh, 92.0 AFUE.  
 Cooling: Air conditioner, 36.0 kBtuh, 14.0 SEER.  
 Water Heating: Instant water heater, Gas, 0.80 EF.  
 Window-to-Wall Area Ratio: 0.19  
 Blower door test: Htg: 0.05 Clg: 0.05 ACHnat

In accordance with IECC, building inputs, such as setpoints, infiltration rates, and window shading may have been changed prior to calculating annual energy cost. Furthermore, the standard reference design HVAC system efficiencies are set to the "prevailing federal minimum standards" as of January, 2006. These standards are subject to change, and software updates should be obtained periodically to ensure the compliance calculations reflect current federal minimum standards.

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**1995 MEC OVERALL BUILDING U<sub>o</sub> COMPLIANCE**

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Elements	Insulation Levels	
	1995 MEC	As Designed
Shell U <sub>o</sub> Check		
Ceilings (U-Value):	0.026	0.020
Above-Grade Walls (U-Value):	0.123	0.096
Floors Over Uncond Crawl Space (U-Value):	0.050	0.045
Overall U <sub>o</sub> (Design must be lower):	0.066	0.054

This home MEETS the overall thermal performance requirements of the 1995 Model Energy Code based on 6179 heating degree-days. (Section 502, Model Energy Code, 1995 edition.)

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Building Elements	Type	U-Value	Area
Ceilings			
Roof	R-50 Blown, Attic	0.020	1100.0
Above-Grade Walls			
Wall	R-22, R-10 Cont.	0.036	821.3
Joist	Rim, Cond	0.044	145.0
Window	Triple - Vinyl	0.360	55.0
Window	Triple - Vinyl	0.360	25.0
Window	Triple - Vinyl	0.360	65.0
Window	Triple - Vinyl	0.360	55.0
Door	Steel-urth w/brk	0.187	40.0
Floors Over Uncond. Crawl Space			
Floor	R-30	0.045	1500.0




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1995 MEC ANNUAL ENERGY CONSUMPTION COMPLIANCE

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**Annual Energy Consumption (MMBtu)**

	1995 MEC	As Designed
Heating:	70.0	13.7
Cooling:	3.9	4.0
Water Heating:	26.6	11.9
Lights and Appliances:	34.3	34.3
Photovoltaics:	-0.0	-4.1
<b>Total:</b>	<b>134.8</b>	<b>59.8 *</b>

This home MEETS the annual energy consumption requirements of Section 402 of the 1995 Model Energy Code based on 6179 heating degree-days. In fact, this home surpasses the requirements by 55.6%.

\* Design consumption is based on the following systems:  
 Heating: Fuel-fired air distribution, 32.0 kBtuh, 92.0 AFUE.  
 Cooling: Air conditioner, 36.0 kBtuh, 14.0 SEER.  
 Water Heating: Instant water heater, Gas, 0.80 EF.  
 Blower door test: Htg: 0.05 Clg: 0.05 ACHnat

In accordance with the Model Energy Code, building inputs such as setpoints, infiltration rates, and window shading may have been changed prior to calculating annual energy consumption.

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SUMMARY OF SELECTED REPORTS

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File Name: HighEfficiency.blg

Date: October 13, 2007

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**ENERGY ANALYSIS**

**Action Report**

Ranks the building elements with the largest energy consumption on a component basis.

**Air Leakage Report**

Displays infiltration in all available units (regardless of the user input). Displays duct leakage in all available units if other than the qualitative default is selected. Also displays the building ventilation information.

**Building File Report**

Echoes the building inputs. Use for verification or documentation.

**Component Consumption Summary**

Presents the heating and cooling energy consumption of the building on a component basis.

**Component Load Summary**

Presents the heating and cooling load of the building on a component basis.

**Component Design Load Summary**

Presents the heating and cooling design load (or sizing load) of the building on a component basis, in kBtuh.

**Fuel Summary**

Summarizes the end-use energy consumption by fuel type.

**Energy Cost And Feature Report**

Summarizes the annual heating, cooling, water heating and lights and appliance costs and the major energy design features of the home.

**Equipment Sizing Summary**

Provides information about sizing heating and cooling equipment to meet the peak loads and the minimum Sensible Heat Fraction (SHF).

**Lights And Appliances Summary**

Summarizes the annual lights and appliance costs of the home.

**Performance Summary**

Summarizes the annual loads, energy consumption, and energy costs for heating, cooling, water heating, and lights and appliances.

**Performance Factors**

Shows area normalized and climate normalized consumption.

**Source Energy & Emissions Report**

Summarizes the Carbon Dioxide (CO<sub>2</sub>), Sulfur Dioxide (SO<sub>2</sub>), and Nitrous Oxides (NO<sub>x</sub>) emissions from the source (power plant) based on the type of fuel used at the home and the location. The emission data for all 50 states were obtained from the American Gas Association.

**Emissions Report**

Summarizes the absolute values for Carbon Dioxide (CO<sub>2</sub>), Sulfur Dioxide (SO<sub>2</sub>), and Nitrous Oxides (NO<sub>x</sub>) emissions produced by the currently loaded building. Use the 2-building report option to display a meaningful comparison between two buildings.

**2005 EPAct Tax Credit**

The report indicates whether the home qualifies for tax credits under Section 1332, Credit for Construction of New Energy Efficient Homes, of the Energy Policy Act of 2005.

**CODE COMPLIANCE**

**ASHRAE 90.2 Envelope Component Compliance**

Compare the U<sub>o</sub> values of the home to the prescriptive requirements of ASHRAE Standard 90.2-1992

**ASHRAE 90.2 Annual Energy Consumption Compliance**

Compare the energy performance of the home to the requirements of ASHRAE Standard 90.2-1992.

**Energy Star Home Report**

Shows whether your building design meets the EPA ENERGY STAR Home requirements based on the modified end-use loads for heating, cooling, and water heating.

**Energy Star Requirements**

This report is an extension of the Energy Star Report containing additional requirements that must be completed to receive an ENERGY STAR label. The report contains the ENERGY STAR Products and Thermal Bypass checklist.

**Energy Star Home Verification Summary**

This report is an extension of the Energy Star Report. Besides reporting if the building passed the EPA's requirements, it also lists the general building information, building shell features, and mechanical system features.

**IECC U<sub>o</sub> Compliance Report**

The U<sub>o</sub> compliance compares the overall U-value of the building to the overall U-value for an identical home insulated to meet the minimum component performance requirements of IECC. The required component U-values are based on the number of heating degree-days for the building site.

**IECC Consumption Compliance Report**

The report compares the total annual energy use for the building design to a prescriptive version of the same building. This type of compliance allows additional flexibility in complying with IECC. The impacts of high efficiency heating and cooling systems, reduced infiltration and other performance features are considered for compliance.

**MEC U<sub>o</sub> Compliance Report**

The U<sub>o</sub> compliance compares the overall U-value of the building to the overall U-value for an identical home insulated to meet the minimum component performance requirements of MEC. The required component U-values are based on the number of heating degree-days for the building site.

**MEC Consumption Compliance Report**

The report compares the total annual energy use for the building design to a prescriptive version of the same building. This type of compliance allows additional flexibility in complying with MEC. The impacts of high efficiency heating and cooling systems, reduced infiltration and other performance features are considered for compliance.