

HOT2000

Natural Resources CANADA
Version 10.51

File: sample house report
Application Type: EnerGuide for New Houses

Weather Library: C:\H2KEGH~1\Dat\Wth100.dir

Weather Data for VANCOUVER, BRITISH COLUMBIA

Builder Code: 7909N03000

Data Entry by: Luke Dolan
Date of entry: 30/04/2014
Company: Capital Home Energy

Client name: House, Sample
Street address: 9000 West 10 Ave

City: Vancouver **Region:** British Columbia
Postal code: V7R 2J7 **Telephone:** 604-839-5973

Mailing address: 9000 West 10 Ave
City: Vancouver **Region:** British Columbia
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GENERAL HOUSE CHARACTERISTICS

House type: Single Detached
Number of storeys: Two storeys
Plan shape: Rectangular
Front orientation: South
Year House Built: 2014
Wall colour: Default **Absorptivity:** 0.40
Roof colour: Medium brown **Absorptivity:** 0.84
Soil Condition: Normal conductivity (dry sand, loam, clay)
Water Table Level: Normal (7-10m/23-33ft)

House Thermal Mass Level: (A) Light, wood frame

Effective mass fraction 1.000

Occupants :
2 Adults for 50.0% of the time
2 Children for 50.0% of the time
0 Infants for 0.0% of the time

Sensible Internal Heat Gain From Occupants: 2.40 kWh/day

HOUSE TEMPERATURES
Heating Temperatures

Main Floor:	69.8 °F
Basement:	66.2 °F
TEMP. Rise from 69.8 °F:	5.0 °F

Indoor design temperatures for equipment sizing

Heating:	71.6 °F
Cooling:	75.2 °F

WINDOW CHARACTERISTICS

Label	Location	#	Overhang Width (ft)	Header Height (ft)	Tilt deg	Curtain Factor	Shutter (R)
South							
BACK	BACK	1	2.00	1.00	90.0	1.00	0.00
BACK 2	BACK 2	1	2.00	1.00	90.0	1.00	0.00
ENTRY	ENTRY	1	6.50	1.00	90.0	1.00	0.00
upper	Upper	1	0.00	0.00	90.0	1.00	0.00
East							
E1	1/2 storey walls	1	2.00	1.75	90.0	1.00	0.00
North							
N1	1/2 storey walls	1	2.00	2.50	90.0	1.00	0.00
West							
W1	main	1	2.00	2.75	90.0	1.00	0.00

Label	Type	#	Window Width (ft)	Window Height (ft)	Total Area (ft ²)	Window R	SHGC
South							
BACK	213212	1	3.00	5.00	15.00	3.223	0.3912
BACK 2	213212	1	3.00	5.00	15.00	3.223	0.3912
ENTRY	213212	1	2.00	5.00	10.00	3.053	0.3585
upper	213001	1	2.00	5.00	10.00	2.346	0.4414
East							
E1	213214	1	4.00	2.00	8.00	3.015	0.3502
North							
N1	213214	1	6.00	2.00	12.00	3.078	0.3640
West							
W1	213204	1	7.25	1.50	10.88	3.287	0.4019

WINDOW CODE SCHEDULE

Name	Internal Code	Description (Glazings, Coatings, Fill, Spacer, Type, Frame)

213212	213212	Double/double with 1 coat, Low-E .04 (soft), 13 mm Argon, Insulating, Hinged, Wood, RE* = -18.224, Eff. RSI= 3.01
213001	213001	Double/double with 1 coat, Low-E .04 (soft), 13 mm Argon, Metal, Picture, Aluminum thermal break, RE* = -14.849, Eff. RSI= 2.65
213214	213214	Double/double with 1 coat, Low-E .04 (soft), 13 mm Argon, Insulating, Hinged, Vinyl, RE* = -18.224, Eff. RSI= 3.01
213204	213204	Double/double with 1 coat, Low-E .04 (soft), 13 mm Argon, Insulating, Picture, Vinyl, RE* = -4.636, Eff. RSI= 3.52

* Window Standard Energy Rating estimated for assumed dimensions, and Air tightness type: CSA - A1; Leakage rate = 2.790 m³/hr/m

BUILDING PARAMETER DETAILS**CEILING COMPONENTS**

	Construction Type	Code Type	Roof Slope	Heel Ht.(ft)	Section Area (ft ²)	R. Value (R)
FLAT	Flat	2231WF1000	0.000/12	0.43	17.50	26.07
Vault	Cathedral	2231WF1000	9.300/12	0.50	440.00	27.39

CEILING CODE SCHEDULE

Name	Internal Code	Description (Structure, typ/size, Spacing, Insull, 2, Int., Sheathing, Exterior, Studs)
2231WF1000	2231WF1000	Wood frame, 38x235 mm (2x10 in), 400 mm (16 in), N/A, N/A, 12 mm (0.5 in) gypsum board, N/A, N/A, N/A

MAIN WALL COMPONENTS

Label	Lintel Type	Fac. Dir	Number of Corn.	Number of Inter.	Height (ft)	Perim. (ft)	Area (ft ²)	R. Value (R)
1/2 storey walls Type: 1211401711	101	N/A	6	0	4.00	61.50	246.00	16.48
V3 End Type: 1211401711	101	N/A	6	0	3.50	7.00	24.50	11.53
main Type: 1211401711	101	N/A	6	3	8.00	71.00	568.00	16.66
Floor Header - 1 Type: 1800WE0510		N/A	4	4	1.00	13.00	13.00	25.50

WALL CODE SCHEDULE

Name	Internal Code	Description (Structure, typ/size, Spacing, Insull, 2, Int., Sheathing, Exterior, Studs)
1211401711	1211401711	Wood frame, 38x140 mm (2x6 in), 400 mm (16 in), RSI 3.9 (R 22) Batt, None, 12 mm (0.5 in) gypsum board, Plywood/Particle board 18.5 mm (3/4 in), Wood (lapped), 3 studs
1800WE0510	1800WE0510	Floor header, N/A, N/A, N/A, N/A, N/A, Plywood/Particle board 12.7 mm (1/2 in), Wood (lapped), N/A

EXPOSED FLOORS

Label	Floor Code Type	Area (ft ²)	R. Value (R)
EXPOSED FLOOR	3231506710	218.00	29.15

EXPOSED FLOOR SCHEDULE

Name	Internal Code	Description (Structure, typ/size, Spacing, Insull, 2, Int., Sheathing, Exterior, Studs)
3231506710	3231506710	Wood frame, 38x235 mm (2x10 in), 400 mm (16 in), RSI 4.9 (R 28) Batt, None, Wood, Plywood/Particle board 18.5 mm (3/4 in), Wood (lapped), No

DOORS

Label	Type	Height (ft)	Width (ft)	Gross Area (ft ²)	R. Value (R)
BACK Loc: main	Solid wood	7.00	5.00	35.00	2.21
BACK 2 Loc: main	Solid wood	7.00	5.00	35.00	2.21
ENTRY Loc: main	Solid wood	7.00	4.83	33.83	2.21
GARAGE Loc: main	Steel polyurethane core	6.67	3.00	20.00	6.47
Mech Room Loc: V3 End	Steel polyurethane core	3.00	5.00	15.00	6.47
Upper Loc: 1/2 storey walls	Steel polyurethane core	4.00	6.67	26.67	6.47

FOUNDATIONS

FOUNDATION CODE SCHEDULE

Lintel Code Schedule

Name	Code	Description (Type, Material, Insulation)
101	101	Double, Wood, Same as wall framing cavity

ROOF CAVITY INPUTS

Sloped Roof		Total Area:	0.00 ft ²
Sheathing Material	Plywood/Part. bd 12.7 mm (1/2 in)		0.63 R
Exterior Material:	Asphalt shingles		0.44 R
Total Cavity Volume:	0.0 ft ³	Ventilation Rate:	0.50 ACH/hr

BUILDING ASSEMBLY DETAILS

Label	Construction Code	Nominal (R)	System (R)	Effective (R)
CEILING COMPONENTS				
FLAT	2231WF1000	29.49	26.07	26.07
Vault	2231WF1000	29.49	27.39	27.39
MAIN WALL COMPONENTS				
1/2 storey walls	1211401711	21.97	16.45	16.48
V3 End	1211401711	21.97	10.03	11.53
main	1211401711	21.97	16.65	16.66
Floor Header - 1	1800WE0510	23.72	25.50	25.50
EXPOSED FLOORS				
EXPOSED FLOOR	3231506710	27.87	29.15	29.15

BUILDING PARAMETERS SUMMARY**ZONE 1 : Above Grade**

Component	Area ft ² Gross	Area ft ² Net	Effective (R)	Heat Loss Mil.BTU	% Annual Heat Loss
Ceiling	457.50	457.50	27.33	1.89	7.49
Main Walls	851.50	655.13	16.62	6.26	24.78
Doors	165.50	115.50	3.13	6.37	25.22
Exposed floors	218.00	218.00	29.15	1.18	4.66
South Windows	50.00	50.00	2.97	2.91	11.52
East Windows	8.00	8.00	3.02	0.46	1.81
North Windows	12.00	12.00	3.08	0.67	2.67
West Windows	10.88	10.88	3.29	0.57	2.26
ZONE 1 Totals:				20.32	80.41

ZONE 2 : Basement

Component	Area ft ² Gross	Area ft ² Net	Effective (R)	Heat Loss Mil.BTU	% Annual Heat Loss
Ventilation					
	House Volume	Air Change		Heat Loss Mil.BTU	% Annual Heat Loss
	5113.50 ft ³	0.367 ACH		4.949	19.59

AIR LEAKAGE AND VENTILATION

Building Envelope Surface Area: 1527.00 ft²

Air Leakage Test Results at 50 Pa.(0.2 in H₂O) = 6.13 ACH

Equivalent Leakage Area @ 10 Pa = 53.68 in²

Terrain Description	Height	ft
@ Weather Station : Open flat terrain, grass	Anemometer	32.8
@ Building site : Suburban, forest	Bldg. Eaves	18.0

Local Shielding:	Walls:	Heavy
	Flue :	Light

Leakage Fractions-	Ceiling: 0.200	Walls: 0.600	Floors: 0.200
Normalized Leakage Area @ 10 Pa:	0.0352 in ² /ft ²		
Estimated Airflow to cause a 5 Pa Pressure Difference:	117 cfm		
Estimated Airflow to cause a 10 Pa Pressure Difference:	183 cfm		

F326 VENTILATION REQUIREMENTS

Kitchen, Living Room, Dining Room	3 rooms @ 2.4 cfm: 31.8 cfm
Utility Room	1 rooms @ 2.4 cfm: 10.6 cfm
Bedroom	1 rooms @ 4.7 cfm: 21.2 cfm
Bathroom	1 rooms @ 2.4 cfm: 10.6 cfm
Basement Rooms	: 0.0 cfm

CENTRAL VENTILATION SYSTEM

System Type:	HVI Certified HRV
Manufacturer:	NuAir
Model Number:	ES100

Fan and Preheater Power at 32.0 °F:	28 Watts
Fan and Preheater Power at -13.0 °F:	28 Watts
Preheater Capacity:	0 Watts
Sensible Heat Recovery Efficiency at 32.0 °F	68%
Sensible Heat Recovery Efficiency at -13.0 °F	65%
Total Heat Recovery Efficiency in Cooling Mode	25%
Low Temperature Ventilation Reduction:	0%
Low Temperature Ventilation Reduction: Airflow Adjustment	0 cfm (0.0%)

Vented combustion appliance depressurization limit: 5.00 Pa.

Ventilation Supply Duct

Location:	Main floor	Type:	Flexible
Length:	4.9 ft	Diameter:	6.0 in
Insulation:	4.0 R	Sealing Characteristics:	Sealed

Ventilation Exhaust Duct

Location:	Main floor	Type:	Flexible
Length:	4.9 ft	Diameter:	6.0 in
Insulation:	4.0 R	Sealing Characteristics:	Sealed

Operating schedule for

Month	% of Time	Added Vent. Rate (cfm)	Month	% of Time	Added Vent. Rate (cfm)
Jan	92.47	27.24	Jul	0.00	0.00
Feb	95.79	28.22	Aug	0.00	0.00
Mar	100.00	29.46	Sep	0.00	0.00
Apr	0.00	0.00	Oct	0.00	0.00
May	0.00	0.00	Nov	99.49	29.31
Jun	0.00	0.00	Dec	92.25	27.17

SECONDARY FANS & OTHER EXHAUST APPLIANCES

	Control	Supply (cfm)	Exhaust (cfm)
Other Fans	Continuous	0.00	20.00

Rated Fan Power 20.00 Watts

AIR LEAKAGE AND VENTILATION SUMMARY

F326 Required continuous ventilation:	74.161 cfm (0.87 ACH)
Central Ventilation Supply Rate ():	29.458 cfm (0.35 ACH)
Other Continuous Supply Flow Rates:	0.000 cfm (0.00 ACH)
Other Continuous Exhaust Flow Rates:	20.000 cfm (0.23 ACH)
Total house ventilation is Balanced	
Gross Air Leakage and Ventilation Energy Load:	7.445 Mil.BTU
Seasonal Heat Recovery Ventilator Efficiency:	65.632 %
Estimated Ventilation Electrical Load: Heating Hours:	0.330 Mil.BTU
Estimated Ventilation Electrical Load: Non-Heating Hours:	0.000 Mil.BTU
Net Air Leakage and Ventilation Load:	5.114 Mil.BTU

SPACE HEATING SYSTEM

Primary Heating Fuel: Natural Gas
Equipment: Condensing furnace/boiler
Manufacturer: NAVIEN
Model: NCB240
Specified Output Capacity: 108999.89 BTU/hr

AFUE: 93.30
Steady State Efficiency: 93.30
Fan Mode: Auto
ECM Motor: Yes
Low Speed Fan Power: 0 watts
High Speed Fan Power: 382 watts

DOMESTIC WATER HEATING SYSTEM

Primary Water Heating Fuel: Natural gas
Water Heating Equipment: Instantaneous (condensing)
Energy Factor: 0.930
Manufacturer: NAVIEN
Model: NCB240
Pilot Energy = 0.00 BTU/hr **Flue Diameter** 0.00 In

ANNUAL DOMESTIC WATER HEATING SUMMARY

Daily Hot Water Consumption: 49.49 Imp Gal
Hot Water Temperature: 131.00 °F
Estimated Domestic Water Heating Load: 14 Mil.BTU
Primary Domestic Water Heating Energy Consumption: 15.12 Mil.BTU
Primary System Seasonal Efficiency: 95.76%

ANNUAL SPACE HEATING SUMMARY

Design Heat Loss at 15.80 °F (1.74 BTU/hr / Ft3): 8884.86 BTU/hr
Gross Space Heat Loss: 25.27 Mil.BTU

Gross Space Heating Load: 25.27 Mil.BTU
Usable Internal Gains: 18.25 Mil.BTU
Usable Internal Gains Fraction: 72.21 %
Usable Solar Gains: 2.61 Mil.BTU
Usable Solar Gains Fraction: 10.32 %
Auxiliary Energy Required: 4.41 Mil.BTU

Space Heating System Load: 4.41 Mil.BTU
Furnace/Boiler Seasonal efficiency: 93.37 %

Furnace/Boiler Annual Energy Consumption: 4.67 Mil.BTU

BASE LOADS SUMMARY

	kwh/day	Annual kWh
Interior Lighting	3.40	1241.00
Appliances	9.00	3285.00
Other	7.60	2774.00
Exterior Use	4.00	1460.00
HVAC Fans		
HRV/Exhaust	0.26	96.72
Space Heating	0.04	15.30
Space Cooling	0.00	0.00
Total Average Electrical Load	24.31	8872.01

EnerGuide Energy Credits

Other Credits 1	135 kWh
Total	135 kWh

FAN OPERATION SUMMARY (kWh)

Hours	HRV/Exhaust Fans	Space Heating	Space Cooling
Heating	96.7	15.3	0.0
Neither	0.0	0.0	0.0
Cooling	0.0	0.0	0.0
Total	96.7	15.3	0.0

ENERGUIDE FOR HOUSES ENERGY CONSUMPTION SUMMARY REPORT

Estimated Annual Space Heating Energy Consumption	= 4986.87 MJ	= 1385.24 kWh
Ventilator Electrical Consumption: Heating Hours	= 348.18 MJ	= 96.72 kWh
Estimated Annual DHW Heating Energy Consumption	= 15952.52 MJ	= 4431.25 kWh
ESTIMATED ANNUAL SPACE + DHW ENERGY CONSUMPTION	= 21287.56 MJ	= 5913.21 kWh
ENERGUIDE RATING (0 to 100)	84	
EnerGuide Required Ventilation Capacity	29.46 cfm	
Estimated Greenhouse Gas Emissions	5.788 tonnes/year	

ESTIMATED ANNUAL FUEL CONSUMPTION SUMMARY

Fuel	Space Heating	Space Cooling	DHW Heating	Appliance	Total
Natural Gas (MCF)	4.67	0.00	15.12	0.00	19.79
Electricity (kWh)	112.01	0.00	0.00	8760.00	8872.01

ESTIMATED ANNUAL FUEL CONSUMPTION COSTS

Fuel Costs Library = Embedded

RATE	Electricity (BCH 2013)	Natural Gas (LMland)	Oil (Vanc)	Propane (Vanc)	Wood (BC)	Total
\$	693.69	339.29	0.00	0.00	0.00	1032.97

Fuel Costs Library Listing

Filename = Embedded

Record # 1 Fuel: Electricity

Rate ID = BC Hydro
BCHydro Rate 09

Rate Block	Dollars	Charge
	kWhr	Per kWhr (\$)
Minimum	0.0	5.000
1	1351.0	0.0591
2	99999.0	0.0827

Record # 2 Fuel: Natural Gas

Rate ID = Lower Mainland BC
LMland Rate 09

Rate Block	Dollars	Charge
	GJ	Per GJ (\$)

Minimum	0.0		10.000
1	99999.0	10.5000	

Record # 3 Fuel: Oil

Rate ID = Vancouver
Vanc BC Rate 09

Rate Block		Dollars	Charge
	Litre	Per Litre	(\$)
Minimum	0.0		0.000
1	99999.0	0.8810	

Record # 4 Fuel: Propane

Rate ID = Vancouver
Vanc BC Rate 09

Rate Block		Dollars	Charge
	Litre	Per Litre	(\$)
Minimum	0.0		0.900
1	99999.0	0.9000	

Record # 5 Fuel: Wood

Rate ID = BC
Cord Rate

Rate Block		Dollars	Charge
	Cord	Per Cord	(\$)
Minimum	0.0		0.000
1	99999.0	200.0000	

Record # 6 Fuel: Natural Gas

Rate ID = Vancouver
Island BC
Rate 09

Rate Block		Dollars	Charge
	GJ	Per GJ	(\$)
Minimum	0.0		10.500
1	99999.0	14.3250	

Record # 7 Fuel: Electricity

Rate ID = Updated
BCH 2013 April 23,
2013

Rate Block		Dollars	Charge
	kWhr	Per kWhr	(\$)
Minimum	0.0		4.580
1	675.0	0.0690	
2	99999.0	0.1034	

MONTHLY ENERGY PROFILE

Month	Energy Load (Mil.BTU)	Internal Gains (Mil.BTU)	Solar Gains (Mil.BTU)	Aux. Energy (Mil.BTU)	HRV Eff. %
Jan	3.8	2.2	0.3	1.2	65.6
Feb	3.1	1.9	0.4	0.8	65.6
Mar	3.0	2.1	0.5	0.4	65.6
Apr	2.1	1.7	0.3	0.1	0.0
May	1.5	1.4	0.1	0.0	0.0
Jun	0.9	0.9	0.0	0.0	0.0
Jul	0.5	0.5	0.0	0.0	0.0
Aug	0.5	0.5	0.0	0.0	0.0
Sep	1.1	1.0	0.0	0.0	0.0
Oct	2.1	1.7	0.3	0.0	0.0
Nov	3.0	2.1	0.3	0.6	65.6
Dec	3.7	2.2	0.3	1.2	65.6
Ann	25.3	18.2	2.6	4.4	65.6

FOUNDATION TEMPERATURES & VENTILATION PROFILE

Month	Temperature (Deg °F)			Air Change Rate		Heat Loss (Mil.BTU)
	Crawl Space	Basement	Walkout	Natural	Total	
Jan	0.0	0.0	0.0	0.302	0.622	0.8
Feb	0.0	0.0	0.0	0.290	0.622	0.7
Mar	0.0	0.0	0.0	0.276	0.622	0.6
Apr	0.0	0.0	0.0	0.246	0.246	0.4
May	0.0	0.0	0.0	0.206	0.206	0.2
Jun	0.0	0.0	0.0	0.172	0.172	0.1
Jul	0.0	0.0	0.0	0.145	0.145	0.1
Aug	0.0	0.0	0.0	0.140	0.140	0.1
Sep	0.0	0.0	0.0	0.172	0.172	0.1
Oct	0.0	0.0	0.0	0.227	0.227	0.3
Nov	0.0	0.0	0.0	0.278	0.622	0.6
Dec	0.0	0.0	0.0	0.303	0.622	0.8
Ann	0.0	0.0	0.0	0.229	0.367	4.9

SPACE HEATING SYSTEM PERFORMANCE

Month	Space Heating Load (Mil.BTU)	Furnace Input (Mil.BTU)	Pilot Light (Mil.BTU)	Indoor Fans (Mil.BTU)	Heat Pump Input (Mil.BTU)	Total Input (Mil.BTU)	System Cop
Jan	1.2	1.3	0.0	0.0	0.0	1.3	0.9
Feb	0.8	0.8	0.0	0.0	0.0	0.8	0.9
Mar	0.4	0.5	0.0	0.0	0.0	0.5	0.9
Apr	0.1	0.1	0.0	0.0	0.0	0.1	0.9
May	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Jun	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Jul	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aug	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sep	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oct	0.0	0.1	0.0	0.0	0.0	0.1	0.9
Nov	0.6	0.7	0.0	0.0	0.0	0.7	0.9
Dec	1.2	1.3	0.0	0.0	0.0	1.3	0.9
Ann	4.4	4.7	0.0	0.1	0.0	4.7	0.9

MONTHLY ESTIMATED ENERGY CONSUMPTION BY DEVICE (Mil.BTU)

Month	Space Heating		DHW Heating		Lights & Appliances	HRV & FANS	Air Conditioner
	Primary	Secondary	Primary	Secondary			
Jan	1.305	0.000	1.388	0.000	2.539	0.080	0.000
Feb	0.796	0.000	1.268	0.000	2.293	0.070	0.000
Mar	0.473	0.000	1.388	0.000	2.539	0.076	0.000
Apr	0.091	0.000	1.301	0.000	2.457	0.001	0.000
May	0.000	0.000	1.285	0.000	2.539	0.000	0.000
Jun	0.000	0.000	1.186	0.000	2.457	0.000	0.000
Jul	0.000	0.000	1.181	0.000	2.539	0.000	0.000
Aug	0.000	0.000	1.165	0.000	2.539	0.000	0.000
Sep	0.000	0.000	1.143	0.000	2.457	0.000	0.000
Oct	0.051	0.000	1.225	0.000	2.539	0.001	0.000
Nov	0.678	0.000	1.243	0.000	2.457	0.076	0.000
Dec	1.281	0.000	1.345	0.000	2.539	0.079	0.000
Ann	4.674	0.000	15.120	0.000	29.890	0.382	0.000

ESTIMATED FUEL COSTS (Dollars)

Month	Electricity	Natural Gas	Oil	Propane	Wood	Total
Jan	60.71	39.83	0.00	0.00	0.00	100.54
Feb	52.97	32.87	0.00	0.00	0.00	85.84
Mar	60.59	30.62	0.00	0.00	0.00	91.21
Apr	55.84	25.42	0.00	0.00	0.00	81.26
May	58.29	24.23	0.00	0.00	0.00	82.52
Jun	55.81	23.13	0.00	0.00	0.00	78.94
Jul	58.29	23.09	0.00	0.00	0.00	81.38
Aug	58.29	22.91	0.00	0.00	0.00	81.20
Sep	55.81	22.67	0.00	0.00	0.00	78.47
Oct	58.31	24.13	0.00	0.00	0.00	82.44
Nov	58.10	31.28	0.00	0.00	0.00	89.38
Dec	60.70	39.09	0.00	0.00	0.00	99.78
Ann	693.69	339.29	0.00	0.00	0.00	1032.97

The calculated heat losses and energy consumptions are only estimates, based upon the data entered and assumptions within the program. Actual energy consumption and heat losses will be influenced by construction practices, localized weather, equipment characteristics and the lifestyle of the occupants.