

RESULTS

PROJECT #: TOWN1-U4-SOUTH. 0 || CSA F280



These results have been generated by The TECA Heat Loss & Heat Gain Calculator (V5.08), which is CSA F280 Verified

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BUILDING INFORMATION

CALCULATIONS PERFORMED FOR: BC MINISTRY OF HOUSING

CALCULATIONS PERFORMED BY

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SOFTWARE LICENSING

COMPANY
NAME
REG. #:



PROJECT #: TOWN1-U4-SOUTH
ADDRESS:
CITY: VANCOUVER
PROVINCE: BC
POSTAL CODE:
BUILDING MODEL: TOWN-01-UNIT 4
SITE: SOUTH
LOT:



DESIGNER OF BUILDING DRAWINGS: Leckie Studio Architecture + Design Inc.

DATE OF DRAWINGS: September 6, 2024

BUILDING ATTACHMENT: Row House - End Unit

NUMBER OF FLOOR LEVELS: 4 **NUMBER OF STOREYS:** 3 *above grade floor levels*

WEATHER DATA Vancouver (city hall)

LATITUDE: 49.25

LONGITUDE: -123.12

Summer Mean Daily Temperature Range 7 °C

WINDOW SHADING: NO

VENTILATION SYSTEM Non-dedicated HRV, 75CFM, ASE0.65, ATRE:0

HEATING SYSTEM forced air (central system with ductwork)

FRONT OF HOUSE FACING DIRECTION: N

is this value assumed? yes

AIR TIGHTNESS / INFILTRATION ACH50: 1.5, ELA: 230.4 cm², ELA @10Pa

is the air tightness value assumed? yes

BUILDING SITE SHIELDING: Low crops, x/H > 20

LOCAL WALL SHIELDING: Light local shielding

LOCAL FLUE SHIELDING: Light local shielding

INDOOR DESIGN TEMPERATURES: **# OF BEDROOMS:** 4

HEATING: 22°C, 71.6°F

OF PEOPLE: 5

COOLING: 24°C, 75.2°F

OUTDOOR DESIGN TEMPERATURES:

HEATING: -7°C, 19.4°F

COOLING: 28°C, 82.4°F

SOIL TEMPERATURE: 11 °C

Attached documents: _____

Assumptions noted (in addition to listed assumptions on page 1): _____

Notes from the calculator operator: _____

BUILDING ENVELOPE ELEMENTS

WALLS

1/ (TYP. EXT. WALL: R-22), inside wall, // 1/2" GWB, // framing w/ cavity insulation: softwood (default), 2x6 framing @ 16"OC, R20 (5.5"), // Sheathing materials, Softwood plywood, // Insulation, Mineral wool and glass fibre, // Cladding materials, Vinyl siding, outside air; 22.42R-VALUE

CEILINGS

1/ (TYP. ROOF: R-32), inside ceilings, // 1/2" GWB, // framing w/ cavity insulation: softwood (default), 2x6 framing @ 24"OC, custom insulation, // Sheathing materials, Softwood plywood, // Roofing materials, Built-up roofing, outside air; 32.01R-VALUE

INTERIOR FOUNDATION WALL

EXPOSED FLOOR

1/ (TYP. EXPOSED FLOOR), inside floor, // Finished floor w/ underlay, // 3/4" ply, // framing w/ cavity insulation: softwood (default), 2x12 joists @ 16"OC, R35 (9.25"), // Exterior finished material, // outside air; 30.98R-VALUE

EXPOSED HEADER

1/ (TYP. HEADER: R-22); 22R-VALUE

WINDOWS

1/ (Windows (Energy Modelling Requirements)) custom, USI: 1.3, SHGC: 0.25

SKYLIGHTS

1/ (SKYLIGHT) double glazed, Fixed — Wood/Vinyl, insulating, low-E, 13mm Air, USI: 1.96, SHGC: 0.47

DOORS

1/ (EXT. DOOR) Insulated metal — Polyurethane core, without storm door, USI: 0.91

SHADINGS

FOUNDATIONS

1/ [Heated Crawlspace] Concrete Slab & Walls, insulation: below slab = 2.64RSI, interior wall = 2.11RSI, exterior wall = 2.11RSI (configuration #69) // any first storey construction type, interior surface of wall insulated over full-height, exterior surface of wall insulated over full-height, sub-surface of floor slab fully insulated but no insulation under footings, thermal-break between walls and floor slab // AREA: 425ft², FULL PERIMETER: 94ft, EXPOSED PERIMETER: 82ft

HEAT LOSS & HEAT GAIN SUMMARY, (BTUH)

imperial

▼

ROOM NAME	FLOOR LEVEL	FL AREA (ft²)	HEAT LOSS	HEAT GAIN	
			TOTAL	SENS.	TOTAL (sensible + latent)
(#1)HEATED CRAWL - U4	1	425	2603	28	36
(#2)112-ENTRY	2	34	936	294	383
(#3)113-POWDER ROOM	2	20	101	17	23
(#4)114-LIVING ROOM	2	97	1058	2781	3616
(#5)115-KITCHEN/DINING	2	295	2677	3855	5011
(#6)212-LANDING	3	124	834	308	401
(#7)213-WASHROOM	3	41			
(#8)214-BEDROOM 1	3	136	1223	630	819
(#9)215-BEDROOM 2	3	136	1223	902	1173
(#10)305-LANDING	4	124	1233	1144	1488
(#11)306-WASHROOM	4	41	74	48	63
(#12)307-BEDROOM 3	4	136	1094	455	592
(#13)308-BEDROOM 4	4	136	1091	723	940
		AREA	HEAT LOSS	GAIN (sens.)	GAIN (total)
OVERALL BUILDING		1745	14147	11188	14544

PROJECT #: TOWN1-U4-SOUTH. 0

HEAT LOSS COMPONENT BREAKDOWN, (BTUH)											
ROOM NAME	WALL	CEILING	FLOOR	WINDOW & SKYLIGHT	DOOR & HATCH	FOUNDATION	LEAKAGE	VENTILATION	DISTRIBUTION	ADDITIONAL	TOTAL
(#1)HEATED CRAWL - U4	260					1011	744	588			2603
(#2)112-ENTRY	184			321	234		109	87			936
(#3)113-POWDER ROOM	80						12	9			101
(#4)114-LIVING ROOM	388			448			124	98			1058
(#5)115-KITCHEN/DINING	586			747	784		313	248			2677
(#6)212-LANDING	515			149			95	75			834
(#7)213-WASHROOM											
(#8)214-BEDROOM 1	526			448			139	110			1223
(#9)215-BEDROOM 2	526			448			139	110			1223
(#10)305-LANDING	644	190		281			66	52			1233
(#11)306-WASHROOM		67					4	3			74
(#12)307-BEDROOM 3	469	222		299			58	46			1094
(#13)308-BEDROOM 4	466	222		299			58	46			1091
	<u>WAL.</u>	<u>CEI.</u>	<u>FLR.</u>	<u>WIN.</u>	<u>DR.</u>	<u>FND.</u>	<u>LEAK.</u>	<u>VENT.</u>	<u>DIST.</u>	<u>ADD.</u>	<u>TOTAL</u>
TOTAL BUILDING	4646	701		3441	1018	1011	1861	1471			14147

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HEAT GAIN COMPONENT BREAKDOWN, (BTUH)				WINDOW & SKYLIGHT	DOOR & HATCH			DISTRIBUTION & ADDITIONAL	INTERNAL	TOTAL SENSIBLE	TOTAL SENSIBLE + LATENT
	WALL	CEILING	FLOOR			LEAKAGE	VENTILATION				
ROOM NAME	WAL.	CEI.	FLR.	WIN.	DR.	LEAK.	VENT.	DIST.	INT.	SENS.	TOTAL
(#1)HEATED CRAWL - U4	25					0	2			28	36
(#2)112-ENTRY	22			243	2	5	23			294	383
(#3)113-POWDER ROOM	16					0	1			17	23
(#4)114-LIVING ROOM	61			680		13	65		1962	2781	3616
(#5)115-KITCHEN/DINING	56			564	1092	30	151		1962	3855	5011
(#6)212-LANDING	52			227		5	25			308	401
(#7)213-WASHROOM											
(#8)214-BEDROOM 1	41			528		10	50			630	819
(#9)215-BEDROOM 2	60			756		14	72			902	1173
(#10)305-LANDING	85	125		825		18	91			1144	1488
(#11)306-WASHROOM		44				1	4			48	63
(#12)307-BEDROOM 3	41	145		225		7	36			455	592
(#13)308-BEDROOM 4	55	145		453		12	58			723	940
	WAL.	CEI.	FLR.	WIN.	DR.	LEAK.	VENT.	DIST.	INT.	SENS.	TOTAL
TOTAL BUILDING	514	459		4501	1094	116	580		3924	11188	14544
MINIMUM INSTALLED OUTPUT CAPACITY:											11635

MECHANICAL SYSTEM SIZING

HEATING

- The heating system capacity must meet or exceed 100% of the total building heat loss (the minimum installed system capacity equals the total heat loss for the building)
- The combined capacity of the heating distribution system must meet or exceed 100% of the heat loss of the room or space that it serves.

COOLING

- The installed system cooling capacity must meet or exceed 80% of the nominal cooling system capacity (*reflected in the MINIMUM INSTALLED CAPACITY shown for cooling*).
- The installed system cooling capacity shall not be less than the nominal system cooling capacity minus 1800W (*reflected in the MINIMUM INSTALLED CAPACITY shown for cooling*).
- If the cooling system is added to an existing heating system, its capacity (in Watts) need not exceed 18 times the air-handling capacity of the heating system (in L/s).
- Except for ground or water source heat pumps used for cooling, the installed cooling system capacity shall not exceed 125% of the nominal cooling system capacity for the building.
- If the nominal cooling system capacity for the building is less than 6000 W, the installed cooling system capacity may exceed the nominal cooling system capacity by up to 1750 W.
- Note that the nominal cooling system capacity incorporates a latent load multiplier value of 1.3 (unless specified otherwise). Most residential cooling units have a latent capacity of approximately 30% of the sensible capacity. For houses with very small latent loads (if the humidity values are entered by the user directly), it is important to mind the calculation factors. Equipment sizing must be done with individual consideration of sensible and latent loads.