

RESULTS

PROJECT #: QPLX2-U3-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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The heating and cooling loads calculated with this calculator tool are the sole responsibility of the user. This tool is to aid the user in applying to the CSA F280-12 calculation methods. The Thermal Environmental Comfort Association of BC accepts no responsibility for damages whatsoever, and offers no guarantee of equipment sizing or configuration.

BUILDING INFORMATION

CALCULATIONS PERFORMED FOR: BC MINISTRY OF HOUSING

CALCULATIONS PERFORMED BY

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SOFTWARE LICENSING

COMPANY
NAME
REG. #:



PROJECT #: QPLX2-U3-SOUTH
ADDRESS:
CITY: VANCOUVER
PROVINCE: BC
POSTAL CODE:
BUILDING MODEL: QPLX-02-UNIT 3
SITE: SOUTH
LOT:



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

DATE OF DRAWINGS: September 6, 2024

BUILDING ATTACHMENT: Row House - Middle Unit

NUMBER OF FLOOR LEVELS: 3 **NUMBER OF STOREYS:** 2 *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, 45CFM, ASE0.65, ATRE:0

HEATING SYSTEM forced air (central system with ductwork)

FRONT OF HOUSE FACING DIRECTION: E

is this value assumed? yes

AIR TIGHTNESS / INFILTRATION ACH50: 1.5, ELA: 166.2 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:** 2

HEATING: 22°C, 71.6°F

OF PEOPLE: 3

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: 91ft, EXPOSED PERIMETER: 71ft

HEAT LOSS & HEAT GAIN SUMMARY, (BTUH)

imperial

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ROOM NAME	FLOOR LEVEL	FL AREA (ft²)	HEAT LOSS	HEAT GAIN	
			TOTAL	SENS.	TOTAL (sensible + latent)
(#1)HEATED CRAWL - U3	1	425	2071	25	32
(#2)108-ENTRY	2	34	896	767	998
(#3)109-POWDER ROOM	2	20	96	1	1
(#4)110-LIVING ROOM	2	97	1010	2727	3545
(#5)111-KITCHEN/DINING	2	295	1470	2849	3704
(#6)208-BEDROOM 1	3	136	1209	978	1272
(#7)209-BEDROOM 2	3	136	1209	978	1272
(#8)210-WASHROOM	3	40	74	46	60
(#9)211-LANDING	3	124	899	1043	1356
		AREA	HEAT LOSS	GAIN (sens.)	GAIN (total)
OVERALL BUILDING		1307	8934	9414	12239

**HEAT LOSS COMPONENT
BREAKDOWN, (BTUH)**

HEAT LOSS COMPONENT BREAKDOWN, (BTUH)				WINDOW & SKYLIGHT	DOOR & HATCH	FOUNDATION	LEAKAGE	VENTILATION	DISTRIBUTION	ADDITIONAL	TOTAL
ROOM NAME	WALL	CEILING	FLOOR								
	WAL.	CEI.	FLR.	WIN.	DR.	FND.	LEAK.	VENT.	DIST.	ADD.	
(#1)HEATED CRAWL - U3	224					875	532	441			2071
(#2)108-ENTRY	190			321	234		82	68			896
(#3)109-POWDER ROOM	80						9	7			96
(#4)110-LIVING ROOM	392			448			93	77			1010
(#5)111-KITCHEN/DINING	518			471	234		135	112			1470
(#6)208-BEDROOM 1	400	222		448			76	63			1209
(#7)209-BEDROOM 2	400	222		448			76	63			1209
(#8)210-WASHROOM		65					5	4			74
(#9)211-LANDING	325	190		281			56	47			899
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HEAT GAIN COMPONENT BREAKDOWN, (BTUH)	WALL	CEILING	FLOOR	WINDOW & SKYLIGHT	DOOR & HATCH	LEAKAGE	VENTILATION	DISTRIBUTION & ADDITIONAL	INTERNAL	TOTAL SENSIBLE	TOTAL SENSIBLE + LATENT
ROOM NAME	WAL.	CEI.	FLR.	WIN.	DR.	LEAK.	VENT.	DIST.	INT.	SENS.	TOTAL
(#1)HEATED CRAWL - U3	23					0	1			25	32
(#2)108-ENTRY	16			652	46	9	45			767	998
(#3)109-POWDER ROOM	1					0	0			1	1
(#4)110-LIVING ROOM	25			909		12	59		1723	2727	3545
(#5)111-KITCHEN/DINING	46			955	46	13	66		1723	2849	3704
(#6)208-BEDROOM 1	46	145		719		12	57			978	1272
(#7)209-BEDROOM 2	46	145		719		12	57			978	1272
(#8)210-WASHROOM		43				1	3			46	60
(#9)211-LANDING	20	125		825		12	61			1043	1356
TOTAL BUILDING	WAL.	CEI.	FLR.	WIN.	DR.	LEAK.	VENT.	DIST.	INT.	SENS.	TOTAL
	222	458		4778	92	71	348		3446	9414	12239

MINIMUM INSTALLED OUTPUT CAPACITY: 9791

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.