

RESULTS

PROJECT #: QPLX1-U4-NORTH. 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

NAME: TODD BACKUS
COMPANY: TECA
ADDRESS: PO BOX 73105, EVERGREEN RO
CITY: SURREY
PROVINCE: BC
POSTAL CODE: V3R 0J2
PHONE: 604-594-5956
FAX: -
EMAIL: TBACKUS@TECA.CA

SOFTWARE LICENSING

COMPANY:
NAME:
REG. #:



PROJECT #: QPLX1-U4-NORTH
ADDRESS:
CITY: VANCOUVER
PROVINCE: BC
POSTAL CODE:
BUILDING MODEL: QPLX-01-UNIT 4
SITE: NORTH
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, 60CFM, 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: 158.8 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: 144ft², FULL PERIMETER: 56ft, EXPOSED PERIMETER: 56ft

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	144	1674	3	3
(#2)106-ENTRY & STAIRS	2	166	2944	776	1009
(#3)209-KITCHEN/DINING	3	292	1871	3145	4088
(#4)210-LIVING ROOM	3	113	1229	2560	3328
(#5)211-STUDY	3	46	621	365	474
(#6)312-LANDING	4	124	712	829	1077
(#7)313-WASHROOM	4	40	71	47	62
(#8)314-BEDROOM 1	4	136	1077	726	944
(#9)315-BEDROOM 2	4	136	1077	457	594
		AREA	HEAT LOSS	GAIN (sens.)	GAIN (total)
OVERALL BUILDING		1197	11277	8907	11579

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

HEAT LOSS COMPONENT BREAKDOWN, (BTUH)											
	WALL	CEILING	FLOOR	WINDOW & SKYLIGHT	DOOR & HATCH	FOUNDATION	LEAKAGE	VENTILATION	DISTRIBUTION	ADDITIONAL	
ROOM NAME	WAL.	CEI.	FLR.	WIN.	DR.	FND.	LEAK.	VENT.	DIST.	ADD.	TOTAL
(#1)HEATED CRAWL - U4	70					620	513	471			1674
(#2)106-ENTRY & STAIRS	931			574	702		385	353			2944
(#3)209-KITCHEN/DINING	602		125	896			129	118			1871
(#4)210-LIVING ROOM	428		190	448			85	78			1229
(#5)211-STUDY	312		78	149			43	39			621
(#6)312-LANDING	331	190		131			31	29			712
(#7)313-WASHROOM		65					3	3			71
(#8)314-BEDROOM 1	466	222		299			47	43			1077
(#9)315-BEDROOM 2	466	222		299			47	43			1077
	<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	3606	699	393	2796	702	620	1283	1177			11277

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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 - U4	2					0	0			3	3
(#2)106-ENTRY & STAIRS	25			652	22	11	66			776	1009
(#3)209-KITCHEN/DINING	31		3	1246		21	121		1723	3145	4088
(#4)210-LIVING ROOM	69		5	680		12	71		1723	2560	3328
(#5)211-STUDY	23		2	303		5	31			365	474
(#6)312-LANDING	23	125		598		12	70			829	1077
(#7)313-WASHROOM		43				1	4			47	62
(#8)314-BEDROOM 1	55	145		453		11	62			726	944
(#9)315-BEDROOM 2	40	145		225		7	39			457	594
TOTAL BUILDING	WAL.	CEI.	FLR.	WIN.	DR.	LEAK.	VENT.	DIST.	INT.	SENS.	TOTAL
	270	458	9	4157	22	80	464		3446	8907	11579

MINIMUM INSTALLED OUTPUT CAPACITY: **9264**

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.