

RESULTS

PROJECT #: QPLX2-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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BUILDING INFORMATION

CALCULATIONS PERFORMED FOR: BC MINISTRY OF HOUSING

CALCULATIONS PERFORMED BY

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SOFTWARE LICENSING

COMPANY
NAME
REG. #:



PROJECT #: QPLX2-U4-NORTH
ADDRESS:
CITY: VANCOUVER
PROVINCE: BC
POSTAL CODE:
BUILDING MODEL: QPLX-02-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: E

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:** 3

HEATING: 22°C, 71.6°F

OF PEOPLE: 4

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: 93ft, 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	2489	32	42
(#2)112-ENTRY	2	34	942	775	1008
(#3)113-POWDER ROOM	2	20	102	1	1
(#4)114-LIVING ROOM	2	97	761	2010	2613
(#5)115-KITCHEN/DINING	2	295	2444	4537	5898
(#6)212-BEDROOM 1	3	136	1083	730	949
(#7)213-BEDROOM 2	3	136	876	195	254
(#8)214-WASHROOM	3	40			
(#9)215-LANDING	3	124	910	308	401
(#10)304-BEDROOM 3	4	136	1086	875	1138
(#11)305-STUDY	4	136	960	352	457
(#12)306-WASHROOM	4	40	72	46	60
(#13)307-LANDING	4	124	1227	1115	1450
		AREA	HEAT LOSS	GAIN (sens.)	GAIN (total)
OVERALL BUILDING		1743	12952	10977	14271

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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	260					1014	744	471			2489
(#2)112-ENTRY	184			321	234		124	78			942
(#3)113-POWDER ROOM	80						13	8			102
(#4)114-LIVING ROOM	448			149			100	63			761
(#5)115-KITCHEN/DINING	659			149	1112		321	203			2444
(#6)212-BEDROOM 1	555			299			141	89			1083
(#7)213-BEDROOM 2	541			149			114	72			876
(#8)214-WASHROOM											
(#9)215-LANDING	568			149			118	75			910
(#10)304-BEDROOM 3	466	222		299			60	38			1086
(#11)305-STUDY	502	222		149			53	34			960
(#12)306-WASHROOM		65					4	3			72
(#13)307-LANDING	644	190		281			68	43			1227
	WAL.	CEI.	FLR.	WIN.	DR.	FND.	LEAK.	VENT.	DIST.	ADD.	TOTAL
TOTAL BUILDING	4908	699		1947	1346	1014	1861	1177			12952

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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	30					1	2			32	42
(#2)112-ENTRY	16			652	46	12	49			775	1008
(#3)113-POWDER ROOM	1					0	0			1	1
(#4)114-LIVING ROOM	42			113		3	11		1843	2010	2613
(#5)115-KITCHEN/DINING	71			303	2106	43	171		1843	4537	5898
(#6)212-BEDROOM 1	66			606		12	46			730	949
(#7)213-BEDROOM 2	67			113		3	12			195	254
(#8)214-WASHROOM											
(#9)215-LANDING	57			227		5	20			308	401
(#10)304-BEDROOM 3	55	145		606		14	56			875	1138
(#11)305-STUDY	66	145		113		6	22			352	457
(#12)306-WASHROOM		43				1	3			46	60
(#13)307-LANDING	77	125		825		18	71			1115	1450
	WAL.	CEI.	FLR.	WIN.	DR.	LEAK.	VENT.	DIST.	INT.	SENS.	TOTAL
TOTAL BUILDING	546	458		3556	2152	116	464		3685	10977	14271
MINIMUM INSTALLED OUTPUT CAPACITY:											11417

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.