

RESULTS

PROJECT #: QPLX1-U1-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

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SOFTWARE LICENSING

COMPANY
NAME
REG. #:



PROJECT #: QPLX1-U1-NORTH
ADDRESS:
CITY: KELOWNA
PROVINCE: BC
POSTAL CODE:
BUILDING MODEL: QPLX-01-UNIT 1
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	Kelowna		
LATITUDE:	49.88	LONGITUDE:	-119.48
Summer Mean Daily Temperature Range	15 °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: -17°C, 1.4°F
COOLING: 33°C, 91.4°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

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: 57ft, EXPOSED PERIMETER: 57ft

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 - U1	1	144	2323	27	35
(#2)100-ENTRY & STAIRS	2	166	4202	1536	1997
(#3)201-KITCHEN/DINING	3	292	3294	3970	5161
(#4)201-LIVING ROOM	3	113	1140	2651	3446
(#5)202-STUDY	3	46	748	431	561
(#6)300-LANDING	4	124	1630	1430	1859
(#7)301-WASHROOM	4	40	96	56	73
(#8)302-BEDROOM 1	4	136	1140	824	1072
(#9)303-BEDROOM 2	4	136	1268	563	732
		AREA	HEAT LOSS	GAIN (sens.)	GAIN (total)
OVERALL BUILDING		1197	15842	11489	14935

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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 - U1	170					748	772	633			2323
(#2)100-ENTRY & STAIRS	1232			972	944		579	475			4202
(#3)201-KITCHEN/DINING	1274		168	1406			245	201			3294
(#4)201-LIVING ROOM	127		256	603			85	70			1140
(#5)202-STUDY	342		104	201			56	46			748
(#6)300-LANDING	858	256		378			76	62			1630
(#7)301-WASHROOM		88					4	4			96
(#8)302-BEDROOM 1	343	298		402			53	44			1140
(#9)303-BEDROOM 2	460	298		402			59	49			1268
	WAL.	CEI.	FLR.	WIN.	DR.	FND.	LEAK.	VENT.	DIST.	ADD.	TOTAL
TOTAL BUILDING	4805	940	528	4363	944	748	1930	1583			15842

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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 - U1	23					1	3			27	35
(#2)100-ENTRY & STAIRS	154			1079	74	30	199			1536	1997
(#3)201-KITCHEN/DINING	170		12	1729		44	292		1723	3970	5161
(#4)201-LIVING ROOM	13		19	757		18	120		1723	2651	3446
(#5)202-STUDY	31		8	329		8	56			431	561
(#6)300-LANDING	129	138		949		28	186			1430	1859
(#7)301-WASHROOM		47				1	7			56	73
(#8)302-BEDROOM 1	35	161		505		16	107			824	1072
(#9)303-BEDROOM 2	41	161		277		11	73			563	732
	<u>WAL.</u>	<u>CEI.</u>	<u>FLR.</u>	<u>WIN.</u>	<u>DR.</u>	<u>LEAK.</u>	<u>VENT.</u>	<u>DIST.</u>	<u>INT.</u>	<u>SENS.</u>	<u>TOTAL</u>
TOTAL BUILDING	594	509	39	5626	74	157	1044		3446	11489	14935

MINIMUM INSTALLED OUTPUT CAPACITY: 11948

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.