

RESULTS

PROJECT #: QPLX2-U2-EAST. 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

NAME	TODD BACKUS
COMPANY	TECA
ADDRESS	PO BOX 73105, EVERGREEN RO
CITY	SURREY
PROVINCE	BC
POSTAL CODE	V3R 0J2
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SOFTWARE LICENSING

COMPANY
NAME
REG. #:



PROJECT #:	QPLX2-U2-EAST
ADDRESS:	
CITY:	PRINCE GEORGE
PROVINCE:	BC
POSTAL CODE:	
BUILDING MODEL:	QPLX-02-UNIT 2
SITE:	EAST
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:	4	NUMBER OF STOREYS:	3 above grade floor levels

WEATHER DATA	Prince George		
LATITUDE:	53.92	LONGITUDE:	-122.75
Summer Mean Daily Temperature Range	12 °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: 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: -32°C, -25.6°F

COOLING: 28°C, 82.4°F

SOIL TEMPERATURE: 6 °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



ROOM NAME	FLOOR LEVEL	FL AREA (ft²)	HEAT LOSS	HEAT GAIN	
			TOTAL	SENS.	TOTAL (sensible + latent)
(#1)HEATED CRAWL - U2	1	425	4763	31	40
(#2)104-ENTRY	2	34	1966	293	381
(#3)105-POWDER ROOM	2	20	211	17	22
(#4)106-LIVING ROOM	2	97	2211	2656	3453
(#5)107-KITCHEN/DINING	2	295	3226	2485	3230
(#6)204-BEDROOM 1	3	136	2342	894	1162
(#7)205-BEDROOM 2	3	136	2039	301	391
(#8)206-WASHROOM	3	40			
(#9)207-LANDING	3	124	1345	416	540
(#10)300-STUDY	4	136	2326	1045	1359
(#11)301-BEDROOM 3	4	136	2075	453	588
(#12)302-WASHROOM	4	40	136	47	61
(#13)303-LANDING	4	124	2330	1216	1581
		AREA	HEAT LOSS	GAIN (sens.)	GAIN (total)
OVERALL BUILDING		1743	24969	9853	12809

HEAT LOSS COMPONENT
BREAKDOWN, (BTUH)

ROOM NAME	WALL	CEILING	FLOOR	WINDOW & SKYLIGHT	DOOR & HATCH	FOUNDATION	LEAKAGE	VENTILATION	DISTRIBUTION	ADDITIONAL	TOTAL
(#1)HEATED CRAWL - U2	416					1363	2107	877			4763
(#2)104-ENTRY	353			599	436		408	170			1966
(#3)105-POWDER ROOM	149						44	18			211
(#4)106-LIVING ROOM	726			834			459	191			2211
(#5)107-KITCHEN/DINING	965			877	436		670	279			3226
(#6)204-BEDROOM 1	897			834			431	179			2342
(#7)205-BEDROOM 2	952			556			375	156			2039
(#8)206-WASHROOM											
(#9)207-LANDING	716			278			247	103			1345
(#10)300-STUDY	826	413		834			178	74			2326
(#11)301-BEDROOM 3	880	413		556			159	66			2075
(#12)302-WASHROOM		121					10	4			136
(#13)303-LANDING	1200	354		523			179	74			2330
TOTAL BUILDING	WAL.	CEI.	FLR.	WIN.	DR.	FND.	LEAK.	VENT.	DIST.	ADD.	TOTAL
	8081	1302		5893	871	1363	5268	2191			24969

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

ROOM NAME	WALL	CEILING	FLOOR	WINDOW & SKYLIGHT	DOOR & HATCH	LEAKAGE	VENTILATION	DISTRIBUTION & ADDITIONAL	INTERNAL	TOTAL SENSIBLE	TOTAL SENSIBLE + LATENT
	WAL.	CEI.	FLR.	WIN.	DR.	LEAK.	VENT.	DIST.	INT.	SENS.	TOTAL
(#1)HEATED CRAWL - U2	28					0	2			31	40
(#2)104-ENTRY	23			243	2	4	22			293	381
(#3)105-POWDER ROOM	16					0	1			17	22
(#4)106-LIVING ROOM	61			680		11	61		1843	2656	3453
(#5)107-KITCHEN/DINING	84			487	15	9	48		1843	2485	3230
(#6)204-BEDROOM 1	58			756		12	67			894	1162
(#7)205-BEDROOM 2	48			225		4	23			301	391
(#8)206-WASHROOM											
(#9)207-LANDING	76			303		6	31			416	540
(#10)300-STUDY	51	145		756		15	79			1045	1359
(#11)301-BEDROOM 3	42	145		225		6	34			453	588
(#12)302-WASHROOM		43				1	4			47	61
(#13)303-LANDING	82	125		901		17	91			1216	1581
	<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	568	458		4577	16	86	464		3685	9853	12809

MINIMUM INSTALLED OUTPUT CAPACITY: 10247

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.