

RESULTS

PROJECT #: DPLX1-U2-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 #: DPLX1-U2-NORTH
ADDRESS:
CITY: PRINCE GEORGE
PROVINCE: BC
POSTAL CODE:
BUILDING MODEL: DPLX-01-UNIT 2
SITE: NORTH
LOT:



DESIGNER OF BUILDING DRAWINGS: Leckie Studio Architecture + Design Inc.
DATE OF DRAWINGS: September 6, 2024
BUILDING ATTACHMENT: Semi-Detached (Duplex)
NUMBER OF FLOOR LEVELS: 3 NUMBER OF STOREYS: 2 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, 45CFM, ASE0.65, ATRE:0		
HEATING SYSTEM	forced air (central system with ductwork)		

FRONT OF HOUSE FACING DIRECTION:	E
<i>is this value assumed?</i>	yes

AIR TIGHTNESS / INFILTRATION	ACH50: 1.5, ELA: 167.4 cm ² , ELA @10Pa
<i>is the air tightness value assumed?</i>	yes

BUILDING SITE SHIELDING:	Low crops, x/H > 20
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LOCAL WALL SHIELDING:	Light local shielding
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LOCAL FLUE SHIELDING:	Light local shielding
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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: -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

EXPOSED HEADER

1/ (TYP. HEADER: R-22); 22R-VALUE

WINDOWS

1/ (Windows (Energy modelling assumptions)) 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: 448ft², FULL PERIMETER: 93ft, EXPOSED PERIMETER: 67ft

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	448	4007	22	29
(#2)104-ENTRY	2	34	1773	776	1009
(#3)105-POWDER	2	20	191	1	1
(#4)106-LIVING ROOM	2	97	915	1848	2402
(#5)107-KITCHEN/DINING	2	297	3343	3444	4477
(#6)204-BEDROOM 1	3	136	2197	877	1140
(#7)205-BEDROOM 2	3	136	1183	282	367
(#8)206-WASHROOM	3	40	145	47	60
(#9)207-LANDING	3	124	2135	1071	1392
		AREA	HEAT LOSS	GAIN (sens.)	GAIN (total)
OVERALL BUILDING		1332	15890	8367	10877

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HEAT LOSS COMPONENT BREAKDOWN, (BTUH)											
ROOM NAME	WALL	CEILING	FLOOR	WINDOW & SKYLIGHT	DOOR & HATCH	FOUNDATION	LEAKAGE	VENTILATION	DISTRIBUTION	ADDITIONAL	TOTAL
(#1)HEATED CRAWL - U2	394					1299	1493	822			4007
(#2)104-ENTRY	343			599	436		255	141			1773
(#3)105-POWDER	149						28	15			191
(#4)106-LIVING ROOM	432			278			132	72			915
(#5)107-KITCHEN/DINING	1206			1391			481	265			3343
(#6)204-BEDROOM 1	868	413		556			232	128			2197
(#7)205-BEDROOM 2	298	413		278			125	69			1183
(#8)206-WASHROOM		121					15	8			145
(#9)207-LANDING	914	355		517			225	124			2135
	<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	4606	1302		3619	436	1299	2985	1644			15890

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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 - U2	20					0	2			22	29
(#2)104-ENTRY	16			652	46	8	55			776	1009
(#3)105-POWDER	1					0	0			1	1
(#4)106-LIVING ROOM	2			113		1	9		1723	1848	2402
(#5)107-KITCHEN/DINING	67			1515		18	122		1723	3444	4477
(#6)204-BEDROOM 1	55	145		606		9	62			877	1140
(#7)205-BEDROOM 2	1	145		113		3	20			282	367
(#8)206-WASHROOM		43				0	3			47	60
(#9)207-LANDING	49	125		810		11	76			1071	1392
TOTAL BUILDING	WAL.	CEI.	FLR.	WIN.	DR.	LEAK.	VENT.	DIST.	INT.	SENS.	TOTAL
	209	458		3808	46	51	348		3446	8367	10877

MINIMUM INSTALLED OUTPUT CAPACITY: 8702

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.