

RESULTS

PROJECT #: DPLX2-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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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 #: DPLX2-U1-NORTH
ADDRESS:
CITY: PRINCE GEORGE
PROVINCE: BC
POSTAL CODE:
BUILDING MODEL: DPLX-02-UNIT 1
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: 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:	W
<i>is this value assumed?</i>	yes

AIR TIGHTNESS / INFILTRATION	ACH50: 1.5, ELA: 230.9 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:	3
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HEATING: 22°C, 71.6°F	# OF PEOPLE:	4
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COOLING: 24°C, 75.2°F		
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OUTDOOR DESIGN TEMPERATURES:		
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HEATING: -32°C, -25.6°F		
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COOLING: 28°C, 82.4°F		
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SOIL TEMPERATURE: 6 °C		
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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: 448ft², FULL PERIMETER: 93ft, EXPOSED PERIMETER: 67ft

HEAT LOSS & HEAT GAIN SUMMARY, (BTUH)

imperial



ROOM NAME	FLOOR LEVEL	FL AREA (ft²)	HEAT LOSS TOTAL	HEAT GAIN SENS. TOTAL (sensible + latent)
(#1)HEATED CRAWL - U1	1	448	4681	22 29
(#2)100-ENTRY	2	34	2023	796 1034
(#3)101-POWDER	2	20	218	5 7
(#4)102-LIVING ROOM	2	97	1040	2107 2739
(#5)103-KITCHEN/DINING	2	297	3800	3549 4613
(#6)200-BEDROOM 1	3	136	2254	750 975
(#7)201-BEDROOM 2	3	136	897	261 340
(#8)202-WASHROOM	3	40		
(#9)203-LANDING	3	124	1922	161 209
(#10)300-BEDROOM 3	4	136	2127	895 1163
(#11)301-STUDY	4	136	1142	418 544
(#12)302-WASHROOM	4	40	141	47 61
(#13)303-LANDING	4	124	2080	948 1233
		AREA	HEAT LOSS	GAIN (sens.) GAIN (total)
OVERALL BUILDING		1768	22325	9959 12947

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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 - U1	394					1299	2112	877			4681
(#2)100-ENTRY	342			605	436		453	188			2023
(#3)101-POWDER	149						49	20			218
(#4)102-LIVING ROOM	432			278			233	97			1040
(#5)103-KITCHEN/DINING	1206			1391			850	353			3800
(#6)200-BEDROOM 1	1034			556			469	195			2254
(#7)201-BEDROOM 2	355			278			187	77			897
(#8)202-WASHROOM											
(#9)203-LANDING	1078			278			400	166			1922
(#10)300-BEDROOM 3	868	413		556			205	85			2127
(#11)301-STUDY	296	413		278			110	46			1142
(#12)302-WASHROOM		121					14	6			141
(#13)303-LANDING	920	354		523			200	83			2080
	WAL.	CEI.	FLR.	WIN.	DR.	FND.	LEAK.	VENT.	DIST.	ADD.	TOTAL
TOTAL BUILDING	7074	1302		4744	436	1299	5280	2191			22325

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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 - U1	20					0	2			22	29
(#2)100-ENTRY	21			658	46	11	59			796	1034
(#3)101-POWDER	5					0	0			5	7
(#4)102-LIVING ROOM	14			227		4	20		1843	2107	2739
(#5)103-KITCHEN/DINING	42			1515		23	126		1843	3549	4613
(#6)200-BEDROOM 1	78			606		10	55			750	975
(#7)201-BEDROOM 2	12			227		4	19			261	340
(#8)202-WASHROOM											
(#9)203-LANDING	34			113		2	12			161	209
(#10)300-BEDROOM 3	65	145		606		12	66			895	1163
(#11)301-STUDY	10	145		227		6	31			418	544
(#12)302-WASHROOM		43				1	3			47	61
(#13)303-LANDING	30	125		711		13	70			948	1233
TOTAL BUILDING	WAL.	CEI.	FLR.	WIN.	DR.	LEAK.	VENT.	DIST.	INT.	SENS.	TOTAL
	332	458		4888	46	86	464		3685	9959	12947

MINIMUM INSTALLED OUTPUT CAPACITY: 10358

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.