

RESULTS

PROJECT #: DPLX2-U1-SOUTH. 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-SOUTH
ADDRESS:	
CITY:	PRINCE GEORGE
PROVINCE:	BC
POSTAL CODE:	
BUILDING MODEL:	DPLX-02-UNIT 1
SITE:	SOUTH
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:	E
<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

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ROOM NAME	FLOOR LEVEL	FL AREA (ft²)	HEAT LOSS	HEAT GAIN	
			TOTAL	SENS.	TOTAL (sensible + latent)
(#1)HEATED CRAWL - U1	1	448	4681	22	29
(#2)100-ENTRY	2	34	2023	790	1027
(#3)101-POWDER	2	20	218	1	1
(#4)102-LIVING ROOM	2	97	1040	1968	2559
(#5)103-KITCHEN/DINING	2	297	3800	3579	4652
(#6)200-BEDROOM 1	3	136	2254	737	959
(#7)201-BEDROOM 2	3	136	897	125	163
(#8)202-WASHROOM	3	40			
(#9)203-LANDING	3	124	1922	312	405
(#10)300-BEDROOM 3	4	136	2127	885	1150
(#11)301-STUDY	4	136	1142	285	370
(#12)302-WASHROOM	4	40	141	47	61
(#13)303-LANDING	4	124	2080	1097	1425
		AREA	HEAT LOSS	GAIN (sens.)	GAIN (total)
OVERALL BUILDING		1768	22325	9847	12801

HEAT LOSS COMPONENT
BREAKDOWN, (BTUH)

HEAT LOSS COMPONENT BREAKDOWN, (BTUH)											
ROOM NAME	WALL	CEILING	FLOOR	WINDOW & SKYLIGHT	DOOR & HATCH	FOUNDATION	LEAKAGE	VENTILATION	DISTRIBUTION	ADDITIONAL	TOTAL
	WAL.	CEI.	FLR.	WIN.	DR.	FND.	LEAK.	VENT.	DIST.	ADD.	
(#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

PROJECT #: DPLX2-U1-SOUTH. 0

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 - U1	20					0	2			22	29
(#2)100-ENTRY	15			658	46	11	59			790	1027
(#3)101-POWDER	1					0	0			1	1
(#4)102-LIVING ROOM	2			113		2	9		1843	1968	2559
(#5)103-KITCHEN/DINING	67			1515		24	131		1843	3579	4652
(#6)200-BEDROOM 1	66			606		10	55			737	959
(#7)201-BEDROOM 2	1			113		2	9			125	163
(#8)202-WASHROOM											
(#9)203-LANDING	57			227		4	23			312	405
(#10)300-BEDROOM 3	55	145		606		12	67			885	1150
(#11)301-STUDY	1	145		113		4	21			285	370
(#12)302-WASHROOM		43				1	4			47	61
(#13)303-LANDING	49	125		825		15	83			1097	1425
	WAL.	CEI.	FLR.	WIN.	DR.	LEAK.	VENT.	DIST.	INT.	SENS.	TOTAL
TOTAL BUILDING	334	458		4774	46	86	464		3685	9847	12801

MINIMUM INSTALLED OUTPUT CAPACITY: 10241

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.