

RESULTS

PROJECT #: TPLX1-U3-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
PHONE	604-594-5956
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SOFTWARE LICENSING

COMPANY
NAME
REG. #:



PROJECT #:	TPLX1-U3-EAST
ADDRESS:	
CITY:	PRINCE RUPERT
PROVINCE:	BC
POSTAL CODE:	
BUILDING MODEL:	TPLX-01-UNIT 3
SITE:	EAST
LOT:	



DESIGNER OF BUILDING DRAWINGS:	Leckie Studio Architecture + Design Inc.			
DATE OF DRAWINGS:	September 6, 2024			
BUILDING ATTACHMENT:	Single Unit in Multi-Unit Building (stacked dwelling units)			
NUMBER OF FLOOR LEVELS:	4	NUMBER OF STOREYS:	3	above grade floor levels

WEATHER DATA	Prince Rupert		
LATITUDE:	54.32	LONGITUDE:	-130.32
Summer Mean Daily Temperature Range	6 °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: W
is this value assumed? yes

AIR TIGHTNESS / INFILTRATION ACH50: 1.5, ELA: 138.4 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:** 2

HEATING: 22°C, 71.6°F

OF PEOPLE: 3

COOLING: 24°C, 75.2°F

OUTDOOR DESIGN TEMPERATURES:

HEATING: -13°C, 8.6°F

COOLING: 19°C, 66.2°F

SOIL TEMPERATURE: 10 °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: 81ft², FULL PERIMETER: 55ft, EXPOSED PERIMETER: 29ft

HEAT LOSS & HEAT GAIN SUMMARY, (BTUH)

imperial



ROOM NAME	FLOOR LEVEL	FL AREA (ft ²)	HEAT LOSS	HEAT GAIN	
			TOTAL	SENS.	TOTAL (sensible + latent)
(#1)HEATED CRAWL-U3	1	84	1538		
(#2)109-ENTRY	2	65	1876		
(#3)202-KITCHEN	3	233	1875	2576	3349
(#4)203-LIVING	3	220	1859	2576	3349
(#5)304-LANDING	4	124	1255	767	997
(#6)305-WASHROOM	4	40	85	20	26
(#7)306-BEDROOM 1	4	136	690	290	378
(#8)307-BEDROOM 2	4	136	1651	762	991
		AREA	HEAT LOSS	GAIN (sens.)	GAIN (total)
OVERALL BUILDING		1038	10830	6991	9089

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-U3	106					345	660	426			1538
(#2)109-ENTRY	577				484		495	320			1876
(#3)202-KITCHEN	701			901			166	107			1875
(#4)203-LIVING	687			901			164	106			1859
(#5)304-LANDING	594	230		339			56	36			1255
(#6)305-WASHROOM		79					4	2			85
(#7)306-BEDROOM 1	192	268		180			31	20			690
(#8)307-BEDROOM 2	474	268		180	606		74	48			1651
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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-U3											
(#2)109-ENTRY											
(#3)202-KITCHEN				978		-20	-105		1723	2576	3349
(#4)203-LIVING				978		-20	-105		1723	2576	3349
(#5)304-LANDING		66		814		-18	-94			767	997
(#6)305-WASHROOM		22				0	-2			20	26
(#7)306-BEDROOM 1		76		257		-7	-36			290	378
(#8)307-BEDROOM 2		76		257	541	-18	-93			762	991
TOTAL BUILDING	WAL.	CEI.	FLR.	WIN.	DR.	LEAK.	VENT.	DIST.	INT.	SENS.	TOTAL
		241		3283	541	-85	-435		3446	6991	9089

MINIMUM INSTALLED OUTPUT CAPACITY: **7271**

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.