RESULTS

PROJECT #: QPLX2-U4-WEST. 0 || CSA F280

These results have been generated by The TECA Heat Loss & Heat Gain Calculator (V5.08), which is CSA F280 Verified

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 #:	QPLX2-U4-WEST
ADDRESS:	
CITY:	VANCOUVER
PROVINCE:	BC
POSTAL CODE:	
BUILDING MODEL:	QPLX-02-UNIT 4
SITE:	WEST
LOT:	

DESIGNER OF BUILDING DRAWINGS: Leckie Studio Architecture + Design Inc.

DATE OF DRAWINGS: September 6, 2024

BUILDING ATTACHMENT: Row House - End Unit

NUMBER OF FLOOR LEVELS: 4 **NUMBER OF STOREYS:** 3 *above grade floor levels*

PROJECT #: QPLX2-U4-WEST. 0

WEATHER DATA	Vancouver (city hall)		
LATITUDE:	49.25	**LONGITUDE:**	-123.12
Summer Mean Daily Temperature Range	7 °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:	-7°C, 19.4°F		
COOLING:	28°C, 82.4°F		
SOIL TEMPERATURE:	11 °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: 93ft, EXPOSED PERIMETER: 82ft

PROJECT #: QPLX2-U4-WEST. 0

HEAT LOSS & HEAT GAIN SUMMARY, (BTUH)

imperial

ROOM NAME	FLOOR LEVEL	FL AREA (ft^2)	HEAT LOSS TOTAL	HEAT GAIN SENS.	**TOTAL (sensible + latent)**
(#1)HEATED CRAWL - U4	1	425	2489	33	**43**
(#2)112-ENTRY	2	34	942	299	**388**
(#3)113-POWDER ROOM	2	20	102	18	**23**
(#4)114-LIVING ROOM	2	97	761	2251	**2926**
(#5)115-KITCHEN/DINING	2	295	2444	2949	**3833**
(#6)212-BEDROOM 1	3	136	1083	306	**398**
(#7)213-BEDROOM 2	3	136	876	409	**532**
(#8)214-WASHROOM	3	40			
(#9)215-LANDING	3	124	910	431	**560**
(#10)304-BEDROOM 3	4	136	1086	461	**600**
(#11)305-STUDY	4	136	960	564	**733**
(#12)306-WASHROOM	4	40	72	48	**62**
(#13)307-LANDING	4	124	1227	1243	**1616**
		AREA	HEAT LOSS	GAIN (sens.)	GAIN (total)
OVERALL BUILDING		1743	12952	9011	**11714**

PROJECT #: QPLX2-U4-WEST. 0

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 - U4	260					1014	744	471			**2489**
(#2)112-ENTRY	184			321	234		124	78			**942**
(#3)113-POWDER ROOM	80						13	8			**102**
(#4)114-LIVING ROOM	448			149			100	63			**761**
(#5)115-KITCHEN/DINING	659			149	1112		321	203			**2444**
(#6)212-BEDROOM 1	555			299			141	89			**1083**
(#7)213-BEDROOM 2	541			149			114	72			**876**
(#8)214-WASHROOM											
(#9)215-LANDING	568			149			118	75			**910**
(#10)304-BEDROOM 3	466	222		299			60	38			**1086**
(#11)305-STUDY	502	222		149			53	34			**960**
(#12)306-WASHROOM		65					4	3			**72**
(#13)307-LANDING	644	190		281			68	43			**1227**
	WAL.	**CEI.**	**FLR.**	**WIN.**	**DR.**	**FND.**	**LEAK.**	**VENT.**	**DIST.**	**ADD.**	**TOTAL**
TOTAL BUILDING	**4908**	**699**		**1947**	**1346**	**1014**	**1861**	**1177**			**12952**

PROJECT #: QPLX2-U4-WEST. 0

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 - U4	29					1	3			33	**43**
(#2)112-ENTRY	22			243	2	7	26			299	**388**
(#3)113-POWDER ROOM	16					0	2			18	**23**
(#4)114-LIVING ROOM	61			303		9	36		1843	2251	**2926**
(#5)115-KITCHEN/DINING	94			113	778	24	96		1843	2949	**3833**
(#6)212-BEDROOM 1	47			225		7	27			306	**398**
(#7)213-BEDROOM 2	61			303		9	36			409	**532**
(#8)214-WASHROOM											
(#9)215-LANDING	81			303		9	38			431	**560**
(#10)304-BEDROOM 3	40	145		225		10	40			461	**600**
(#11)305-STUDY	54	145		303		12	49			564	**733**
(#12)306-WASHROOM		43				1	4			48	**62**
(#13)307-LANDING	82	125		901		27	108			1243	**1616**
	WAL.	**CEI.**	**FLR.**	**WIN.**	**DR.**	**LEAK.**	**VENT.**	**DIST.**	**INT.**	**SENS.**	**TOTAL**
TOTAL BUILDING	**588**	**458**		**2919**	**780**	**116**	**464**		**3685**	**9011**	**11714**
										MINIMUM INSTALLED OUTPUT CAPACITY:	**9371**

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.