RESULTS

PROJECT #: ADU3-SOUTH. 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 #:	ADU3-SOUTH
ADDRESS:	
CITY:	KELOWNA
PROVINCE:	BC
POSTAL CODE:	
BUILDING MODEL:	ADU-03
SITE:	SOUTH
LOT:	

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

DATE OF DRAWINGS: September 6, 2024

BUILDING ATTACHMENT: Detached

NUMBER OF FLOOR LEVELS: 3 **NUMBER OF STOREYS:** 2 *above grade floor levels*

PROJECT #: ADU3-SOUTH. 0

WEATHER DATA	Kelowna		
LATITUDE:	49.88	**LONGITUDE:**	-119.48
Summer Mean Daily Temperature Range	15 °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: 213.3 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:	-17°C, 1.4°F		
COOLING:	33°C, 91.4°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

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: 480ft², FULL PERIMETER: 116ft, EXPOSED PERIMETER: 116ft

PROJECT #: ADU3-SOUTH. 0

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	1	480	3670	73	**95**
(#2)100-ENTRY & STAIRS	2	180	2329	892	**1160**
(#4)102-POWDER ROOM	2	22	114	11	**15**
(#5)103-LIVING	2	89	1258	3011	**3915**
(#6)104-KITCHEN/DINING	2	197	3170	4938	**6420**
(#7)200-PRIMARY BEDROOM	3	184	1697	1079	**1402**
(#8)201-PRIMARY ENSUITE	3	41	99	54	**70**
(#9)202-BEDROOM 1	3	136	784	347	**451**
(#10)203-BEDROOM 2	3	136	1465	1009	**1311**
(#11)204-WASHROOM	3	40	97	53	**69**
(#12)205-STUDY	3	88	995	475	**617**
(#13)206-LANDING	3	126	1431	1206	**1568**
		AREA	HEAT LOSS	GAIN (sens.)	GAIN (total)
OVERALL BUILDING		1951	17109	13148	**17093**

PROJECT #: ADU3-SOUTH. 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	489					1636	951	593			**3670**
(#2)100-ENTRY & STAIRS	1160			201	654		194	121			**2329**
(#4)102-POWDER ROOM	99						9	6			**114**
(#5)103-LIVING	485			603			105	65			**1258**
(#6)104-KITCHEN/DINING	908			402	1433		263	164			**3170**
(#7)200-PRIMARY BEDROOM	732	404		402			98	61			**1697**
(#8)201-PRIMARY ENSUITE		90					6	4			**99**
(#9)202-BEDROOM 1	211	298		201			45	28			**784**
(#10)203-BEDROOM 2	627	298		402			85	53			**1465**
(#11)204-WASHROOM		88					6	4			**97**
(#12)205-STUDY	508	193		201			58	36			**995**
(#13)206-LANDING	662	261		373			83	52			**1431**
	WAL.	**CEI.**	**FLR.**	**WIN.**	**DR.**	**FND.**	**LEAK.**	**VENT.**	**DIST.**	**ADD.**	**TOTAL**
TOTAL BUILDING	**5881**	**1632**		**2784**	**2087**	**1636**	**1903**	**1187**			**17109**

PROJECT #: ADU3-SOUTH. 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	66					1	6			73	**95**
(#2)100-ENTRY & STAIRS	125			252	426	15	74			892	**1160**
(#4)102-POWDER ROOM	10					0	1			11	**15**
(#5)103-LIVING	66			986		20	97		1843	3011	**3915**
(#6)104-KITCHEN/DINING	129			467	2191	53	256		1843	4938	**6420**
(#7)200-PRIMARY BEDROOM	95	218		657		18	89			1079	**1402**
(#8)201-PRIMARY ENSUITE		49				1	4			54	**70**
(#9)202-BEDROOM 1	12	161		138		6	29			347	**451**
(#10)203-BEDROOM 2	89	161		657		17	83			1009	**1311**
(#11)204-WASHROOM		47				1	4			53	**69**
(#12)205-STUDY	70	104		252		8	39			475	**617**
(#13)206-LANDING	86	141		858		21	100			1206	**1568**
	WAL.	**CEI.**	**FLR.**	**WIN.**	**DR.**	**LEAK.**	**VENT.**	**DIST.**	**INT.**	**SENS.**	**TOTAL**
TOTAL BUILDING	**750**	**883**		**4269**	**2616**	**162**	**783**		**3685**	**13148**	**17093**

MINIMUM INSTALLED OUTPUT CAPACITY: **13674**

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.