



Mechanical Design Report

Low rise residential

Location of Installation	Address 495 DUVERNAY DR	House Builder PHOENIX
	Application Number	House Model (if applicable) CUSTOM
Installing Contractor	Name	City of Ottawa Building Services Branch
	Address	SEP 01 2023
	City	Postal Code
	Telephone Number	Fax Number

SYSTEM DESIGN PARAMETERS

Combustion Appliances 9.32.3.1.(1)	Heating System
a) ☒ Direct vent (sealed combustion) only	☒ Forced Air
b) ☐ Positive venting induced draft (except fireplaces)	☐ Non Forced Air
c) ☐ Natural draft, B-vent or induced draft fireplace	☐ Electric Space Heat
d) ☐ Solid Fuel (including fireplaces)	☐ Radiant Floor Heat (attach pipe details)
e) ☐ No Combustion Appliances	☐ Geothermal (attach loop, pipe & well details)
	☐ High Velocity Residential (attach duct details)
	☐ Other:

House Type 9.32.3.1.(2)	System Design Option
☒ I Type a) or b) appliances only, no solid fuel	☐ Exhaust Only/Forced Air System
☐ II Type I except with solid fuel (including fireplace)	☒ HRV with Exhaust Ducts/Forced Air System
☐ III Any Type c) appliance = Part 6 Design	☐ HRV Simplified Connection to Forced Air System
☐ IV Electric space heat	☐ HRV - Full Ducting/Not Coupled to Forced Air System
☐ Other: No forced air = Option 4	☐ Part 6 Design
	☐ Other:

EQUIPMENT DESIGN REQUIREMENTS

Total Ventilation Capacity 9.32.3.3.(1)			TOTAL
Master Bedroom	1	x 10 L/s =	10 L/s
Unfinished Basement	1	x 10 L/s =	10
Other Habitable Rooms	15	x 5 L/s =	75
Principal Ventilation Capacity 9.32.3.4.(1)			95 T.V.C.
Master Bedroom	1	x 15 L/s =	15 L/s
Other Bedrooms	4	x 7.5 L/s =	30
			- 45 P.V.C.
Required Supplemental Ventilation Capacity (T.V.C. less P.V.C.) =			50

Furnace size: KJ or 80,000 BTU

Air conditioner size: KJ or 3.5 TON BTU or 3.5 TON Tonnes (If provided / applicable)

Heating / Cooling Equipment sized according to heat loss/gain calculations of CAN/CSA F280-12: Yes No

Geothermal Equipment designed according to CAN/CSA-C448.2: Yes No

Hydronic Equipment designed according to CAN/CSA-B214: Yes No

Duct (and pipe) schematic attached including sizes, runs and material used: Yes No



VENTILATION EQUIPMENT

Heat Recovery Ventilator

Model: CLEAN COMFORT VH30100RNC HRV

95 L/s High47.5 L/s Low60 % Sensible Efficiency @ -25°C

Proposed Exhaust Fans

	Location	Model	L/s	Sones	Principal or Supplemental
1	PDRM	DX90	45	2.5	PRINCIPAL
2	ENSUITE	EC50	25	3.	SUPPLEMENTAL
3	BATH	EC50	25	3.	SUPPLEMENTAL
4	BATH 2	EC50	25	3.	SUPPLEMENTAL

EQUIPMENT EFFICIENCIES (Please also refer to Energy Efficiency Design Summary)

Heating system: GOODMAN GM9C962804CNA

Cooling system (if applicable): GOODMAN GSXN4

Water heater:

HRV: % sensible efficiency at 0 degrees: 75

% sensible efficiency at -25 degrees: 60

DESIGNER CERTIFICATION

I hereby certify that this ventilation system has been designed in accordance with the 2012 Ontario Building Code.

Name: LINDA MCPARLANCompany Name: HARDING MECHANICAL

Signature: Linda McParlanDate: JUNE 21/23BCIN 24379HRAI # 6080

City of Ottawa

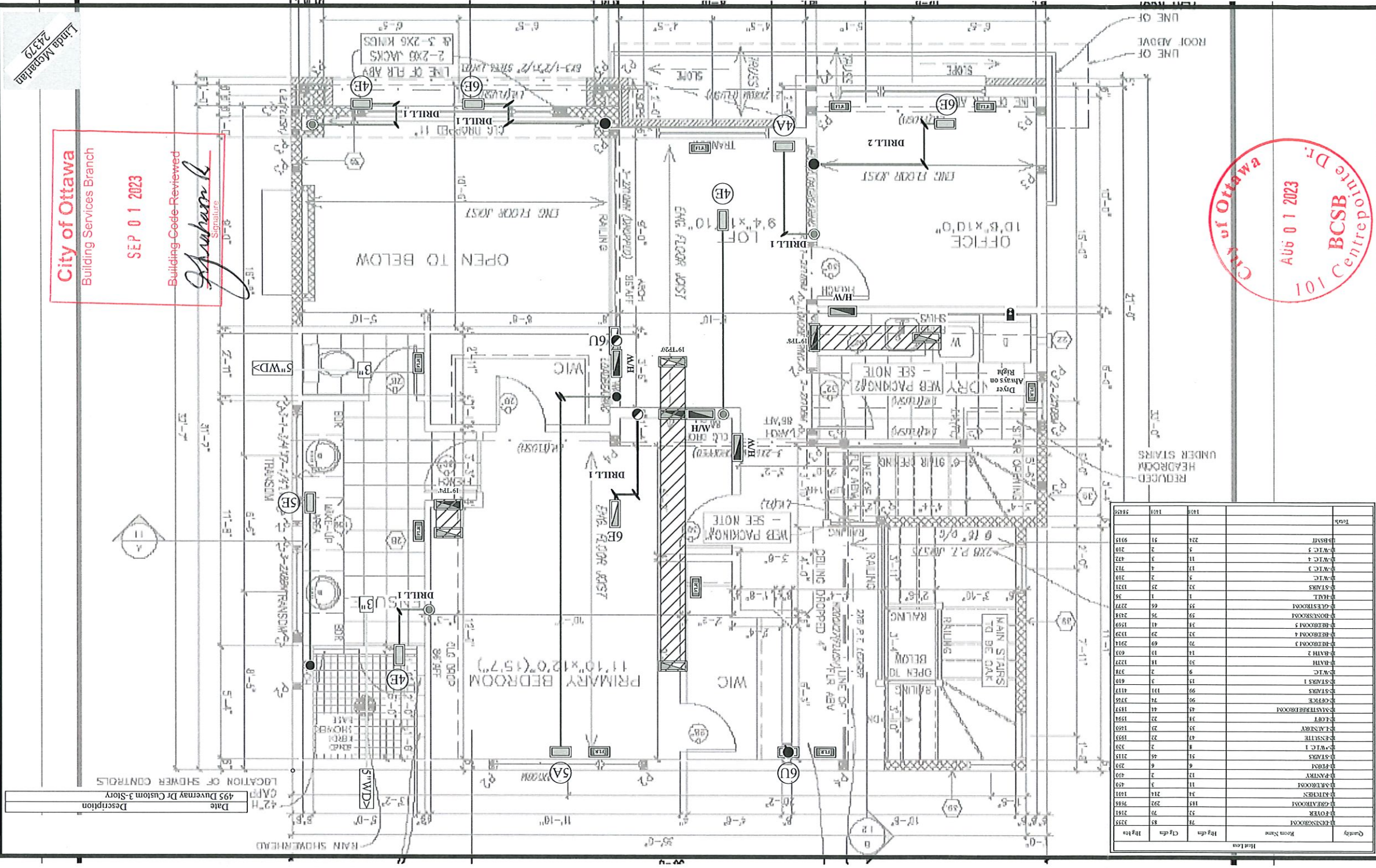
Building Services Branch

SEP 01 2023

Building Code Reviewed

Signature





Quality	Room Name	Room Area	Room Volume	Room Weight
Good	ROOM 100	78	78	9355
	ROOM 101	78	78	9355
	ROOM 102	78	78	9355
	ROOM 103	78	78	9355
	ROOM 104	78	78	9355
	ROOM 105	78	78	9355
	ROOM 106	78	78	9355
	ROOM 107	78	78	9355
	ROOM 108	78	78	9355
	ROOM 109	78	78	9355
	ROOM 110	78	78	9355
	ROOM 111	78	78	9355
	ROOM 112	78	78	9355
	ROOM 113	78	78	9355
	ROOM 114	78	78	9355
	ROOM 115	78	78	9355
	ROOM 116	78	78	9355
	ROOM 117	78	78	9355
	ROOM 118	78	78	9355
	ROOM 119	78	78	9355

Date	Description
495 Duvernay Dr Custom 3-Story	

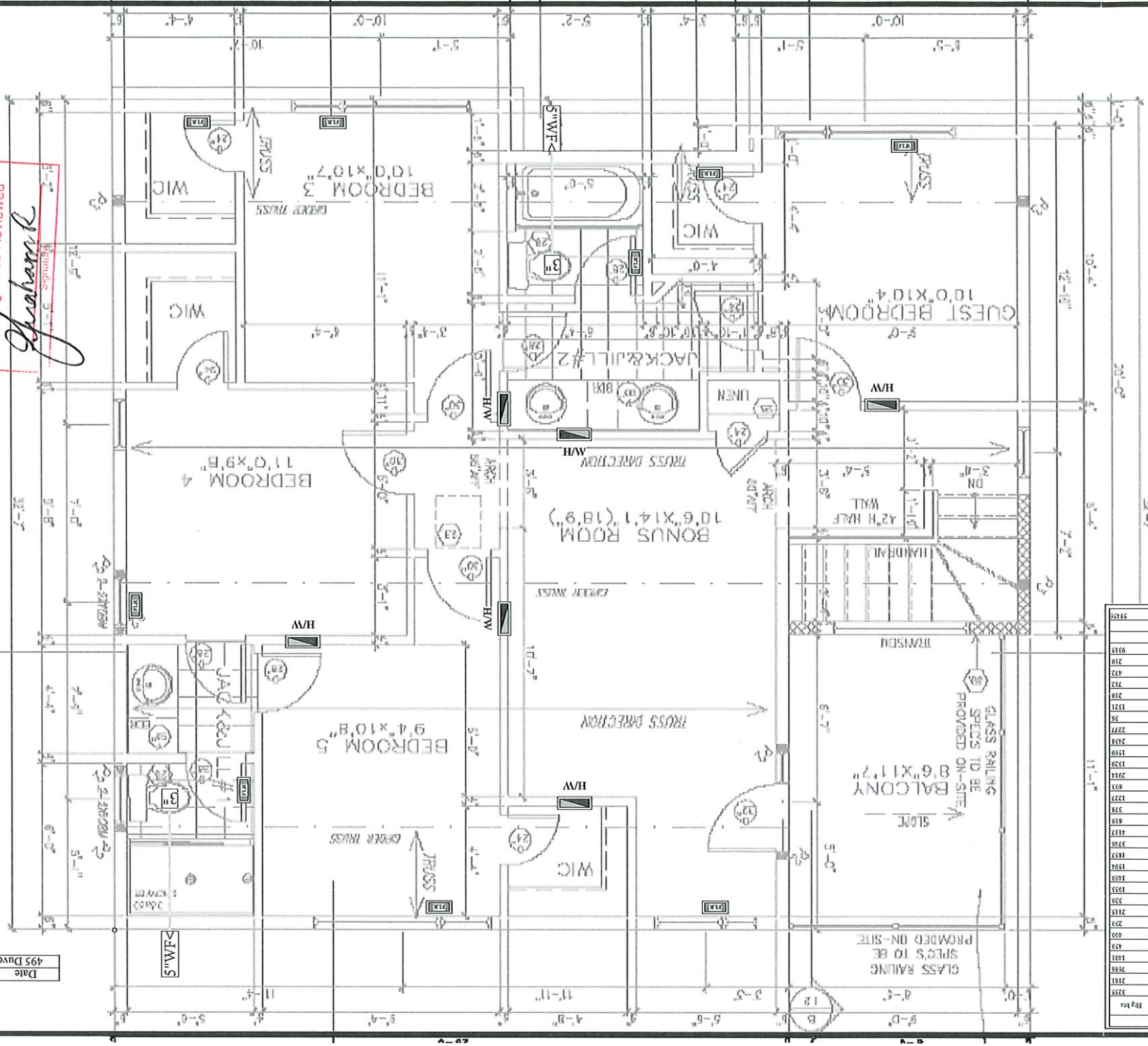
Linda Macdonald
24379

City of Ottawa
Building Services Branch

SEP 01 2023

Building Code Reviewed

Graham R.
1-5 SIGNATURE



Quantity	Room Name	Unit	Area	Volume
1	BEDROOM 1	Sq ft	100	
1	BEDROOM 2	Sq ft	100	
1	BEDROOM 3	Sq ft	100	
1	BEDROOM 4	Sq ft	100	
1	BEDROOM 5	Sq ft	100	
1	BATH	Sq ft	100	
1	BONUS ROOM	Sq ft	100	
1	GUEST BEDROOM	Sq ft	100	
1	TRUSS ROOM	Sq ft	100	
1	LINEN	Sq ft	100	
1	BALCONY	Sq ft	100	
1	STAIRS	Sq ft	100	
1	CL. 1	Sq ft	100	
1	CL. 2	Sq ft	100	
1	CL. 3	Sq ft	100	
1	CL. 4	Sq ft	100	
1	CL. 5	Sq ft	100	
1	CL. 6	Sq ft	100	
1	CL. 7	Sq ft	100	
1	CL. 8	Sq ft	100	
1	CL. 9	Sq ft	100	
1	CL. 10	Sq ft	100	
1	CL. 11	Sq ft	100	
1	CL. 12	Sq ft	100	
1	CL. 13	Sq ft	100	
1	CL. 14	Sq ft	100	
1	CL. 15	Sq ft	100	
1	CL. 16	Sq ft	100	
1	CL. 17	Sq ft	100	
1	CL. 18	Sq ft	100	
1	CL. 19	Sq ft	100	
1	CL. 20	Sq ft	100	
1	CL. 21	Sq ft	100	
1	CL. 22	Sq ft	100	
1	CL. 23	Sq ft	100	
1	CL. 24	Sq ft	100	
1	CL. 25	Sq ft	100	
1	CL. 26	Sq ft	100	
1	CL. 27	Sq ft	100	
1	CL. 28	Sq ft	100	
1	CL. 29	Sq ft	100	
1	CL. 30	Sq ft	100	
1	CL. 31	Sq ft	100	
1	CL. 32	Sq ft	100	
1	CL. 33	Sq ft	100	
1	CL. 34	Sq ft	100	
1	CL. 35	Sq ft	100	
1	CL. 36	Sq ft	100	
1	CL. 37	Sq ft	100	
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1	CL. 78	Sq ft	100	
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1	CL. 81	Sq ft	100	
1	CL. 82	Sq ft	100	
1	CL. 83	Sq ft	100	
1	CL. 84	Sq ft	100	
1	CL. 85	Sq ft	100	
1	CL. 86	Sq ft	100	
1	CL. 87	Sq ft	100	
1	CL. 88	Sq ft	100	
1	CL. 89	Sq ft	100	
1	CL. 90	Sq ft	100	
1	CL. 91	Sq ft	100	
1	CL. 92	Sq ft	100	
1	CL. 93	Sq ft	100	
1	CL. 94	Sq ft	100	
1	CL. 95	Sq ft	100	
1	CL. 96	Sq ft	100	
1	CL. 97	Sq ft	100	
1	CL. 98	Sq ft	100	
1	CL. 99	Sq ft	100	
1	CL. 100	Sq ft	100	

City of Ottawa
AUG 01 2023
BCSB
Centrepointe Dr. 101

Energy Efficiency Design Summary: Prescriptive Method
(Building Code Part 9, Residential)

This form is used by a designer to demonstrate that the energy efficiency design of a house complies with the building code using the prescriptive method described in Subsection 3.1.1. of SB-12. This form is applicable where the ratio of gross area of windows/sidelights/skylights/glazing in doors and sliding glass doors to the gross area of peripheral walls is not more than 22%.

Application No:		For use by Principal/Authority	
		Model/Certification Number	

A. Project Information		
Building number, street name	Unit number	Lot/Con
495 Duvernay Drive		
Municipality	Postal code	Reg. Plan number / other description
Orleans	K1E2H8	50M-22
		Part of Lot B

B. Prescriptive Compliance [indicate the building code compliance package being employed in this house design]

SB-12 Prescriptive (input design package): Package: A1 Table: 3.1.1.2.A(IP)

C. Project Design Conditions		
Climatic Zone (SB-1):	Heating Equipment Efficiency	Space Heating Fuel Source
☒ Zone 1 (< 5000 degree days)	☒ ≥ 92% AFUE	☒ Gas ☐ Propane ☐ Solid Fuel
☐ Zone 2 (≥ 5000 degree days)	☐ ≥ 84% < 92% AFUE	☐ Oil ☐ Electric ☐ Earth Energy
Ratio of Windows, Skylights & Glass (W, S & G) to Wall Area		
Area of walls = _____ m ² or 3976 _____ ft ²	W, S & G % = 14.5	Other Building Characteristics
Utilize window averaging: ☐ Yes ☒ No		☐ Log/Post&Beam ☐ ICF Above Grade ☐ ICF Basement
Area of W, S & G = _____ m ² or 577.9 _____ ft ²		☐ Slab-on-ground ☐ Walkout Basement
		☐ Air Conditioning ☐ Combo Unit
		☐ Air Sourced Heat Pump (ASHP)
		☐ Ground Sourced Heat Pump (GSHP)

D. Building Specifications [provide values and ratings of the energy efficiency components proposed]	
Energy Efficiency Substitutions	
☐ ICF (3.1.1.2.(5) & (6) / 3.1.1.3.(5) & (6))	
☐ Combined space heating and domestic water heating systems (3.1.1.2.(7) / 3.1.1.3.(7))	
☐ Airtightness substitution(s)	Permitted Substitution: _____
Airtightness test required (Refer to Design Guide Attached)	Permitted Substitution: _____

Building Component		Minimum RSI / R values or Maximum U-Value ⁽¹⁾	Building Component	Efficiency Ratings
Thermal Insulation	Nominal	Effective	Windows & Doors	Provide U-Value ⁽¹⁾ or ER rating
	R60		Windows/Sliding Glass Doors	25
	R31		Skylights/Glazed Roofs	0.49
	R31		Mechanicals	
	R22		Heating Equip. (AFUE)	96%
		R21.12	HRV Efficiency (SRE% at 0% ΔT)	75%
	--		DHW Heater (EF)	0.8
	R10		DWHR (CSA B55.1 (min. 42% efficiency))	# Showers 1
	R10		Combined Heating Systems	NO

(1) U value to be provided in either W/(m².K) or Btu/(h.ft².F) but not both.

E. Designer(s) [name(s) & BCIN(s), if applicable, of person(s) providing information herein to substantiate that design meets the building code]

Qualified Designer Declaration of designer to have reviewed and take responsibility for the design work	
Name	Signature
Catherine Buck	
BCIN	46674