

# Energy Efficiency Design Summary: Performance & Other Acceptable Compliance Methods

(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 Performance or Other Acceptable Compliance Methods described in Subsections 3.1.2. and 3.1.3. of SB-12,

This form must accurately reflect the information contained on the drawings and specifications being submitted. Refer to Supplementary Standard SB-12 for details about building code compliance requirements. Further information about energy efficiency requirements for new buildings is available from the provincial building code website or the municipal building department.

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

## A. Project Information

|                                                             |             |                                      |         |
|-------------------------------------------------------------|-------------|--------------------------------------|---------|
| Building number, street name<br><b>Model type 32-02 Opt</b> |             | Unit number                          | Lot/Con |
| Municipality<br><b>Brampton</b>                             | Postal code | Reg. Plan number / other description |         |

## B. Compliance Option [indicate the building code compliance option being employed in this house design]

|                                                                                |                                                                            |
|--------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> <b>SB-12 Performance*</b> [SB-12 - 3.1.2.] | * Attach energy performance results using an approved software (see guide) |
| <input type="checkbox"/> <b>ENERGY STAR®*</b> [SB-12 - 3.1.3.]                 | * Attach Builder Option Package [BOP] form                                 |
| <input type="checkbox"/> <b>R-2000®*</b> [SB-12 - 3.1.3.]                      | * Attach R-2000 HOT2000 Report                                             |

## C. Project Building Design Conditions

| Climatic Zone (SB-1):                                                                                                 | Heating Equipment Efficiency                   | Space Heating Fuel Source                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------------------------------------------------------------------------------------------------------|------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> Zone 1 (< 5000 degree days)                                                       | <input checked="" type="checkbox"/> ≥ 92% AFUE | <input checked="" type="checkbox"/> Gas <input type="checkbox"/> Propane <input type="checkbox"/> Solid Fuel<br><input type="checkbox"/> Oil <input type="checkbox"/> Electric <input type="checkbox"/> Earth Energy                                                                                                                                                                                           |
| <input type="checkbox"/> Zone 2 (≥ 5000 degree days)                                                                  | <input type="checkbox"/> ≥ 84% < 92% AFUE      |                                                                                                                                                                                                                                                                                                                                                                                                                |
| Ratio of Windows, Skylights & Glass (W, S & G) to Wall Area                                                           |                                                | Other Building Characteristics                                                                                                                                                                                                                                                                                                                                                                                 |
| Area of walls = _____m <sup>2</sup> or <u>3040</u> ft <sup>2</sup>                                                    | W, S & G % = <u>12.25</u>                      | <input type="checkbox"/> Log/Post&Beam <input type="checkbox"/> ICF Above Grade <input type="checkbox"/> ICF Basement<br><input type="checkbox"/> Slab-on-ground <input type="checkbox"/> Walkout Basement<br><input type="checkbox"/> Air Conditioning <input type="checkbox"/> Combo Unit<br><input type="checkbox"/> Air Source Heat Pump (ASHP)<br><input type="checkbox"/> Ground Source Heat Pump (GSHP) |
| Area of W, S & G = _____m <sup>2</sup> or <u>372.5</u> ft <sup>2</sup>                                                |                                                |                                                                                                                                                                                                                                                                                                                                                                                                                |
| SB-12 Performance Reference Building Design Package indicating the prescriptive package to be compared for compliance |                                                |                                                                                                                                                                                                                                                                                                                                                                                                                |
| SB-12 Referenced Building Package (input design package): Package: <u>A1</u> Table: <u>3.1.1.2.A</u>                  |                                                |                                                                                                                                                                                                                                                                                                                                                                                                                |

## D. Building Specifications [provide values and ratings of the energy efficiency components proposed, or attach ENERGY STAR BOP form]

| Building Component                       | Minimum RSI / R values or Maximum U-Value <sup>(1)</sup> | Building Component                                          | Efficiency Ratings          |
|------------------------------------------|----------------------------------------------------------|-------------------------------------------------------------|-----------------------------|
| Thermal Insulation                       |                                                          | Windows & Doors Provide U-Value <sup>(1)</sup> or ER rating |                             |
| Ceiling with Attic Space                 | R60                                                      | Windows/Sliding Glass Doors                                 | U=1.6                       |
| Ceiling without Attic Space              | R31                                                      | Skylights/Glazed Roofs                                      | -                           |
| Exposed Floor                            | R31                                                      | Mechanicals                                                 |                             |
| Walls Above Grade                        | R22+1.5ci                                                | Heating Equip.(AFUE)                                        | 96% AFUE                    |
| Basement Walls                           | R20 Blanket                                              | HRV Efficiency (SRE% at 0°C)                                | 75% SRE                     |
| Slab (all >600mm below grade)            | -                                                        | DHW Heater (EF)                                             | 0.9 EF                      |
| Slab (edge only ≤600mm below grade)      | -                                                        | DWHR (CSA B55.1 (min. 42% efficiency))                      | 53%      # Showers <u>1</u> |
| Slab (all ≤600mm below grade, or heated) | -                                                        | Combined Space / Dom. Water Heating                         | -                           |

(1) U value to be provided in either W/(m<sup>2</sup>·K) or Btu/(h·ft<sup>2</sup>·°F) but not both.

**E. Performance Design Verification** [Subsection 3.1.2. Performance Compliance]

The annual energy consumption using Subsection 3.1.1. SB-12 Reference Building Package is 135.13 GJ (1 GJ =1000MJ)

The annual energy consumption of this house as designed is 126.80 GJ

The software used to simulate the annual energy use of the building is: REM RATE 16.0.2 Canada

The building is being designed using an air tightness baseline of:

- ☒ OBC reference ACH, NLA or NLR default values (no depressurization test required)  
☐ Targeted ACH, NLA or NLR. Depressurization test to meet \_\_\_\_\_ ACH50 or NLR or NLA

- ☒ Reduction of overall thermal performance of the proposed building envelope is not more than 25% of the envelope of the compliance package it is compared against (3.1.2.1.(6)).  
☒ Standard Operating Conditions Applied (A-3.1.2.1 - 4.6.2)  
☐ Reduced Operating Conditions for Zero-rated homes Applied (A-3.1.2.1 - 4.6.2.5)

- ☐ On Site Renewable(s): Solar: \_\_\_\_\_  
Other Types: \_\_\_\_\_

**F. ENERGY STAR or R-2000 Performance Design Verification** [Subsection 3.1.3. Other Acceptable Compliance Methods]

- ☐ The NRCan "ENERGY STAR for New Homes Standard Version 12.6 " technical requirements, applied to this building design result in the building performance meeting or exceeding the prescriptive performance requirements of the Supplementary Standard SB12 (A-3.1.3.1).  
☐ The NRCan, "2012 R-2000 Standard " technical requirements, applied to this building design result in the building performance meeting or exceeding the prescriptive performance requirements of the Supplementary Standard SB12 (A-3.1.3.1).

**Performance Energy Modeling Professional**

Energy Evaluator/Advisor/Rater/CEM Name and company:

Accreditation or Evaluator/Advisor/Rater License #

John B Godden/Clearsphere Consulting

08

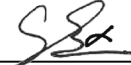
**ENERGY STAR or R-2000**

Energy Evaluator/Advisor/Rater/ Name and company:

Evaluator/Advisor/Rater License #

**G. 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         | BCIN   | Signature                                                                             |
|--------------|--------|---------------------------------------------------------------------------------------|
| Shutong Zhao | 124648 |  |

# Guide to the Energy Efficiency Design Summary Form for Performance & Other Acceptable Compliance Methods

## COMPLETING THE FORM

### B. Compliance Options

Indicate the compliance option being used.

- SB-12 Performance refers to the method of compliance in Subsection 3.1.2. of SB-12. Using this approach the designer must use recognized energy simulation software (such as HOT2000 V10.51 or newer), and submit documents which show that the annual energy use of the proposed building is equal to or less than a prescriptive (referenced) building package.
- ENERGY STAR houses must be designed to ENERGY STAR requirements and verified on completion by a licensed energy evaluator and/or service organization. The ENERGY STAR BOP form must be submitted with the permit documents.
- R-2000 houses must be designed to the R-2000 Standard and verified on completion by a licensed energy evaluator and/or service organization. The HOT2000 report must be submitted with the permit documents.

### C. Project Design Conditions

*Climatic Zone:* The number of degree days for Ontario cities is contained in Supplementary Standard SB-1

*Windows, Skylights and Glass Doors:* If the ratio of the total gross area of windows, sidelights, skylights, glazing in doors and sliding glass doors to the total gross area of walls is more than 17%, higher efficiency glazing is required. The total area is the sum of all the structural rough openings. Some exceptions apply. Refer to 3.1.1.1. of SB-12 for further details.

*Fuel Source and Heating Equipment Efficiency:* The fuel source and efficiency of the proposed heating equipment must be specified in order to determine which SB-12 Prescriptive compliance package table applies.

*Other Building Conditions:* These construction conditions affect SB-12 Prescriptive compliance requirements.

### D. Building Specifications

*Thermal Insulation:* Indicate the RSI or R-value being proposed where they apply to the house design. Refer to SB-12 for further details.

### E. Performance Design Summary

A summary of the performance design applicable only to the SB-12 Performance option.

### F. ENERGY STAR or R-2000 Performance Method

Design to ENERGY STAR or R-2000 Standards.

### G. House Designer

The building code requires designers providing information about whether a building complies with the building code to have a BCIN. Exemptions apply to architects, engineers and owners designing their own house.

## BUILDING CODE REQUIREMENTS FOR AIRTIGHTNESS IN NEW HOUSES

All houses must comply with increased air barrier requirements in the building code. Notice of air barrier completion must be provided and an inspection conducted prior to it being covered.

The air leakage rates in Table 3.1.2.1. are not requirements. The Table is not intended to require or suggest that the building meet those airtightness targets. They are provided only as default or reference values for the purpose of annual energy simulations, should the builder/owner decide to perform such simulations. They are given in three different metrics; ACH, NLA, NLR. Any one of them can be used. They can be used as a default values for both a reference and proposed building or, where an air leakage test is conducted and credit for airtightness is claimed, the airtightness values in Table 3.1.2.1. can be used for the reference building and the actual leakage rates obtained from the air leakage test can be used as inputs for the proposed building.

OBC Reference Default Air Leakage Rates (Table 3.1.2.1.)

|                   |           |                                          |                             |
|-------------------|-----------|------------------------------------------|-----------------------------|
| Detached dwelling | 3.0 ACH50 | NLA 2.12 cm <sup>2</sup> /m <sup>2</sup> | NLR 1.32 L/s/m <sup>2</sup> |
| Attached dwelling | 3.5 ACH50 | NLA 2.27 cm <sup>2</sup> /m <sup>2</sup> | NLR 1.44 L/s/m <sup>2</sup> |

The building code requires that a blower door test be conducted to verify the air tightness of the house during construction if the SB-12 Performance option is used and an air tightness of less than 3.0 ACH @ 50 Pa (or NLA or NLR equivalent) in the case of detached houses, or 3.5 ACH @ 50 Pa (or NLA or NLR equivalent) in the case of attached houses is necessary to meet the required energy efficiency standard.

## ENERGY EFFICIENCY LABELING FOR NEW HOUSES

ENERGY STAR and R-2000 may issue labels for new homes constructed under their energy efficiency programs. The building code does not currently regulate or require new home labeling.

# Code Compliance Certificate

**Project Title: Model 32-02**

Report Date

Data Filename Model 32-02.blg

Energy Code OBC SB-12 Performance Compliance Ontario 2017

Location Toronto, ON\_CAN

Construction Type Single-family detached

Heating Type Natural Gas

Heating Degree Days <5000 HDD-Zone 1

Conditioned Area (sq ft) 3299

Conditioned Volume (cubic ft) 29956

Insulated Shell Area (sq ft) 6758

## Construction Site

Model 32-02

, ON\_CAN

## Owner

Royal Pine Homes

Model 32-02

, ON\_CAN

## Builder

Royal Pine Homes

3550 Langstaff Road, Suite 200

Woodbridge, Ontario L4L 9G3

## HERS Rater

Clearsphere Consulting

John Godden

416-481-4218

## Annual Energy Consumption

### KWH

### GJ

Reference Home Package A1

37536.04

135.13

Proposed House

35222.05

126.80

Better Than Code

6.2%

## SB-12 Performance Compliance: PASS

The Design Home total annual consumption is less than or equal to the Reference Home.

## Building Summary Assembly

### Gross Area or Perimeter

### Cavity R-Value

### Continuous R-Value

### Ceilings

Roof 1: R-60 Attic

1247

14.0

46.0

### Above-Grade Walls

AG Wall 1: R-22+1.5ci

2741

22.0

1.5

Joist 1: Cond -> ambient

254

22.0

1.5

Window 1: U= 0.282 SHGC 0.45

370

3.5

Door 1: Code

10

4.0

Door 2: Code

21

4.0

Door 3: Code

21

4.0

### Floors Over Garage

Floor 1: R-31 Std

223

31.0

0.0

### Basement Walls

# Code Compliance Certificate

## Building Summary

### Assembly

Wall 1: R-20ci Blanket Code  
Window 2: U= 0.282 SHGC 0.45  
Door 4

### Gross Area or Perimeter

1221  
24  
21

### Cavity R-Value

0.0

### Continuous R-Value

20.0  
3.5  
4.0

## Mechanical Equipment

Heating: Fuel-fired air distribution  
Water Heating: Conventional, Gas  
Cooling: Air conditioner  
HRV/ERV

### Name/Type

96 AFUE  
0.9 EF Condensing  
13SEER A/C 1.5 ton  
-----

### Size/Input

32.0 kBtuh  
50 gal  
18.0 kBtuh,  
63.0 CFM

### Efficiency

96.0 AFUE  
0.90 EF  
13.0 SEER  
75.0% sen/ 0.0% tot

## Drain Water Heat Recovery

1 of 1 Showers connected and 53.3% unit efficiency

## Air Exchange

3.52 ACH50 or: 0.26 CFM50/sf

## Efficient Lighting

0.0% Interior, 0.0% Exterior, 0.0% Garage

## Renewables

N/A

# Building Summary

## Property

Royal Pine Homes  
Model 32-02 - a1 ref  
, ON\_CAN

## Organization

Clearsphere Consulting  
416-481-4218  
John Godden

## HERS

Projected Rating  
Rating No:N/A  
Rater ID:0001

Weather:Toronto, ON\_CAN  
Model 32-02 - a1 ref  
Model 32-02 - a1 ref.blg

## Builder

Royal Pine Homes

## Property/Builder Information

|                  |                      |
|------------------|----------------------|
| Building Name    | Model 32-02 - a1 ref |
| Owner's Name     | Royal Pine Homes     |
| Property Address | Model 32-02 - a1 ref |
| City, St, Zip    | , ON_CAN             |
| Phone Number     |                      |

|                       |                      |
|-----------------------|----------------------|
| Builder's Name        | Royal Pine Homes     |
| Phone Number          |                      |
| Email Address         |                      |
| Plan/Model Name       | Model 32-02 - a1 ref |
| Community/Development |                      |
| Identifier/Other      |                      |

## Organization Information

|                   |                         |
|-------------------|-------------------------|
| Organization Name | Clearsphere Consulting  |
| Address           | 1632 O'Connor Dr.       |
| City, St, Zip     | Toronto, ON_CAN M4B 3P4 |
| Phone Number      | 416-481-4218            |
| Website           | www.clearsphere.ca      |

## Rating/RESNET Information

|                          |                       |
|--------------------------|-----------------------|
| Provider ID              | 2006-001              |
| Sample Set ID            | 00000000              |
| Registry ID              |                       |
| Registry Date Registered |                       |
| Rater's Name             | John Godden           |
| Rater's ID               | 0001                  |
| Rater's Email            | howard@clearsphere.ca |
| Last Field Insp          |                       |
| Rating Type              | Projected Rating      |
| Reason for Rating        | New Home              |
| Rating Number            | N/A                   |
| Rating Permit Date       | 06/19/2024            |

**REM/Rate - Residential Energy Analysis and Rating Software v16.0.2 Canada**

This information does not constitute any warranty of energy costs or savings.

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# Building Summary

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Royal Pine Homes  
Model 32-02 - a1 ref  
, ON\_CAN

## Organization

Clearsphere Consulting  
416-481-4218  
John Godden

## HERS

Projected Rating  
Rating No:N/A  
Rater ID:0001

Weather:Toronto, ON\_CAN

Model 32-02 - a1 ref  
Model 32-02 - a1 ref.blg

## Builder

Royal Pine Homes

## General Building Information

|                                                  |                        |
|--------------------------------------------------|------------------------|
| Area of Conditioned. Space(sq ft)                | 3299                   |
| Volume of Conditioned. Space                     | 29956                  |
| Year Built                                       | 2024                   |
| Housing Type                                     | Single-family detached |
| Level Type(Apartments Only)                      | None                   |
| Floors on or Above-Grade                         | 2                      |
| Number of Bedrooms                               | 4                      |
| Foundation Type                                  | Conditioned basement   |
| Foundation is w/in Infiltration Volume:          | N/A                    |
| Enclosed Crawl Space Type                        | N/A                    |
| Number of Stories Including Conditioned Basement | 3                      |
| Thermal Boundary Location                        | N/A                    |

## Foundation Wall Information

| Name            | Library Entry       | Location         | Length(ft) | Total Height(ft) | Depth Below Grade(ft) | Height Above Grade(ft) | Uo Value Combo* | Uo Value (wall only) |
|-----------------|---------------------|------------------|------------|------------------|-----------------------|------------------------|-----------------|----------------------|
| Foundation Wall | R-20ci Blanket Code | Cond->ambient/gm | 153.50     | 8.25             | 7.42                  | 0.83                   | 0.038           | 0.139                |

\* Uo Value Combo combines wall, airfilm, and soil path

## Foundation Wall Library List

### Foundation Wall: R-20ci Blanket Code

|                         |                             |
|-------------------------|-----------------------------|
| Type                    | Solid concrete or stone     |
| Thickness(in)           | 8.0                         |
| Studs                   | None                        |
| Interior Insulation     |                             |
| Continuous R-Value      | 20.0                        |
| Frame Cavity R-Value    | 0.0                         |
| Cavity Insulation Grade | 3                           |
| Ins top                 | 0.00 ft from top of wall    |
| Ins Bottom              | 0.50 ft from bottom of wall |
| Exterior Insulation     |                             |
| R-Value                 | 0.0                         |

# Building Summary

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Royal Pine Homes  
Model 32-02 - a1 ref  
, ON\_CAN

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416-481-4218  
John Godden

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Projected Rating  
Rating No:N/A  
Rater ID:0001

Weather:Toronto, ON\_CAN

Model 32-02 - a1 ref  
Model 32-02 - a1 ref.blg

## Builder

Royal Pine Homes

## Foundation Wall Library List

|            |                          |
|------------|--------------------------|
| Ins top    | 0.00 ft from top of wall |
| Ins bottom | 0.00 ft below grade      |

Note

## Slab Floor Information

| Name | Library Entry | Area(sq ft) | Depth Below Grade(ft) | Full Perimeter(ft) | Exposed Perimeter(ft) | On-Grade Perimeter(ft) |
|------|---------------|-------------|-----------------------|--------------------|-----------------------|------------------------|
| Slab | Uninsulated   | 1026        | 7.42                  | 154                | 154                   | 0                      |

## Slab Floor Library List

### Slab Floor: Uninsulated

|                                  |        |
|----------------------------------|--------|
| Slab Covering                    | Carpet |
| Perimeter Insulation (R-Value)   | 0.0    |
| Perimeter Insulation Depth (ft)  | 0.0    |
| Under-Slab Insulation (R-Value)  | 0.0    |
| Under-Slab Insulation Width (ft) | 0.0    |
| Slab Insulation Grade            | 1      |
| Radiant Slab                     | No     |

Note

## Frame Floor Information

| Name          | Library Entry | Location           | Area(sq ft) | Uo Value |
|---------------|---------------|--------------------|-------------|----------|
| Exposed floor | R-31 Std      | Btwn cond & garage | 223         | 0.046    |

## Frame Floor Library List

Floor: R-31 Std

Information From Quick Fill Screen

|                                   |            |
|-----------------------------------|------------|
| Continous Insulation R-Value      | 0.0        |
| Cavity Insulation R-Value         | 31.0       |
| Cavity Insulation Thickness (in.) | 11.5       |
| Cavity Insulation Grade           | 3          |
| Joist Size (w x h, in)            | 1.5 x 11.5 |
| Joist Spacing (in oc)             | 16.0       |
| Framing Factor - (default)        | 0.1300     |

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Weather:Toronto, ON\_CAN

Model 32-02 - a1 ref  
Model 32-02 - a1 ref.blg

## Builder

Royal Pine Homes

## Frame Floor Library List

Floor Covering CARPET  
Note

## Rim and Band Joist Information

| Name           | Location        | Area(sq ft) | Continuous Ins | Framed Cavity Ins | Cavity Ins Thk(in) | Joist Spacing | Insulation Grade | Uo Value |
|----------------|-----------------|-------------|----------------|-------------------|--------------------|---------------|------------------|----------|
| Rim Band Joist | Cond -> ambient | 254.10      | 0.0            | 22.0              | 5.5                | 16.0          | 3                | 0.062    |

## Above-Grade Wall

| Name | Library Entry | Location        | Exterior Color | Area(sq ft) | Uo Value |
|------|---------------|-----------------|----------------|-------------|----------|
| AGW  | R-22 Std      | Cond -> ambient | Medium         | 2741.20     | 0.067    |

## Above-Grade Wall Library List

### Above-Grade Wall: R-22 Std

Information From Quick Fill Screen

|                                        |                          |
|----------------------------------------|--------------------------|
| Wall Construction Type                 | Std Frame w/Brick Veneer |
| Continuous Insulation (R-Value)        | 0.0                      |
| Frame Cavity Insulation (R-Value)      | 22.0                     |
| Frame Cavity Insulation Thickness (in) | 5.5                      |
| Frame Cavity Insulation Grade          | 3                        |
| Stud Size (w x d, in)                  | 1.5 x 5.5                |
| Stud Spacing (in o.c.)                 | 16.0                     |
| Framing Factor - (default)             | 0.2300                   |
| Gypsum Thickness (in)                  | 0.5                      |

Note

## Window Information

| Name  | Wall Assignment | Orient | U-Value | SHGC  | Area (sqft) | Overhang   |             |             | Interior       |                | Adjacent       |                |
|-------|-----------------|--------|---------|-------|-------------|------------|-------------|-------------|----------------|----------------|----------------|----------------|
|       |                 |        |         |       |             | Depth (ft) | To Top (ft) | To Btm (ft) | Winter Shading | Summer Shading | Winter Shading | Summer Shading |
| front | AGWall 1        | South  | 0.282   | 0.450 | 15.90       | 0.0        | 0.0         | 0.0         | 0.85           | 0.70           | None           | None           |
| front | AGWall 1        | South  | 0.282   | 0.450 | 5.33        | 0.0        | 0.0         | 0.0         | 0.85           | 0.70           | None           | None           |
| front | AGWall 1        | South  | 0.282   | 0.450 | 30.00       | 0.0        | 0.0         | 0.0         | 0.85           | 0.70           | None           | None           |

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# Building Summary

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Model 32-02 - a1 ref  
, ON\_CAN

## Organization

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John Godden

## HERS

Projected Rating  
Rating No:N/A  
Rater ID:0001

Weather:Toronto, ON\_CAN

Model 32-02 - a1 ref  
Model 32-02 - a1 ref.blg

## Builder

Royal Pine Homes

## Window Information

| Name       | Wall Assignment | Orient | U-Value | SHGC  | Area (sqft) | Overhang   |             |             | Interior       |                | Adjacent       |                |
|------------|-----------------|--------|---------|-------|-------------|------------|-------------|-------------|----------------|----------------|----------------|----------------|
|            |                 |        |         |       |             | Depth (ft) | To Top (ft) | To Btm (ft) | Winter Shading | Summer Shading | Winter Shading | Summer Shading |
| front      | AGWall 1        | South  | 0.282   | 0.450 | 28.00       | 0.0        | 0.0         | 0.0         | 0.85           | 0.70           | None           | None           |
| front      | AGWall 1        | South  | 0.282   | 0.450 | 24.50       | 0.0        | 0.0         | 0.0         | 0.85           | 0.70           | None           | None           |
| front      | AGWall 1        | South  | 0.282   | 0.450 | 27.50       | 0.0        | 0.0         | 0.0         | 0.85           | 0.70           | None           | None           |
| front Door | AGWall 1        | South  | 0.282   | 0.450 | 10.00       | 0.0        | 0.0         | 0.0         | 0.85           | 0.70           | None           | None           |
| side       | FndWall 1       | East   | 0.282   | 0.450 | 16.00       | 0.0        | 0.0         | 0.0         | 0.85           | 0.70           | None           | None           |
| side       | AGWall 1        | East   | 0.282   | 0.450 | 34.00       | 0.0        | 0.0         | 0.0         | 0.85           | 0.70           | None           | None           |
| side       | AGWall 1        | East   | 0.282   | 0.450 | 22.70       | 0.0        | 0.0         | 0.0         | 0.85           | 0.70           | None           | None           |
| side       | AGWall 1        | East   | 0.282   | 0.450 | 8.00        | 0.0        | 0.0         | 0.0         | 0.85           | 0.70           | None           | None           |
| side       | AGWall 1        | East   | 0.282   | 0.450 | 17.33       | 0.0        | 0.0         | 0.0         | 0.85           | 0.70           | None           | None           |
| back       | FndWall 1       | North  | 0.282   | 0.450 | 8.00        | 0.0        | 0.0         | 0.0         | 0.85           | 0.70           | None           | None           |
| back       | AGWall 1        | North  | 0.282   | 0.450 | 47.00       | 0.0        | 0.0         | 0.0         | 0.85           | 0.70           | None           | None           |
| back       | AGWall 1        | North  | 0.282   | 0.450 | 45.33       | 0.0        | 0.0         | 0.0         | 0.85           | 0.70           | None           | None           |
| back       | AGWall 1        | North  | 0.282   | 0.450 | 17.33       | 0.0        | 0.0         | 0.0         | 0.85           | 0.70           | None           | None           |
| back       | AGWall 1        | North  | 0.282   | 0.450 | 37.33       | 0.0        | 0.0         | 0.0         | 0.85           | 0.70           | None           | None           |

## Door Information

| Name        | Library Entry | Wall Assignment | Opaque Area(sq ft) | Uo Value | R-Value of Opaque Area | Storm Door |
|-------------|---------------|-----------------|--------------------|----------|------------------------|------------|
| Front       | Code          | AGWall 1        | 10.0               | 0.203    | 4.0                    | No         |
| garage      | Code          | AGWall 1        | 21.0               | 0.203    | 4.0                    | No         |
| side        | Code          | AGWall 1        | 21.0               | 0.203    | 4.0                    | No         |
| Cold Cellar | Code          | FndWall 1       | 21.0               | 0.203    | 4.0                    | No         |

## Roof Information

| Name               | Library Entry | Ceiling Area(sq ft) | Roof Area(sq ft) | Exterior Color | Radiant Barrier | Type  | Uo Value | Cement or Clay Tiles | Roof Tile Ventilation |
|--------------------|---------------|---------------------|------------------|----------------|-----------------|-------|----------|----------------------|-----------------------|
| Ceiling-with attic | R-60 Attic    | 1247.00             | 1558.75          | Dark           | No              | Attic | 0.017    | No                   | No                    |

## Roof Library List

Ceiling: R-60 Attic

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# Building Summary

**Property**

Royal Pine Homes  
Model 32-02 - a1 ref  
, ON\_CAN

**Organization**

Clearsphere Consulting  
416-481-4218  
John Godden

**HERS**

Projected Rating  
Rating No:N/A  
Rater ID:0001

Weather:Toronto, ON\_CAN

Model 32-02 - a1 ref  
Model 32-02 - a1 ref.blg

**Builder**

Royal Pine Homes

## Roof Library List

Information From Quick Fill Screen

|                                     |           |
|-------------------------------------|-----------|
| Continous Insulation (R-Value)      | 46.0      |
| Cavity Insulation (R-Value)         | 14.0      |
| Cavity Insulation Thickness (in)    | 3.5       |
| Cavity Insulation Grade             | 3         |
| Gypsum Thickness (in)               | 0.500     |
| Insulated Framing Size(w x h, in)   | 1.5 x 3.5 |
| Insulated Framing Spacing (in o.c.) | 24.0      |
| Framing Factor - (default)          | 0.1100    |
| Ceiling Type                        | Attic     |
| Note                                |           |

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Model 32-02 - a1 ref.blg

## Builder

Royal Pine Homes

## Mechanical Equipment

|                              |         |
|------------------------------|---------|
| Number of Mechanical Systems | 3       |
| Heating SetPoint(F)          | 72.0    |
| Heating Setback Thermostat   | Present |
| Cooling SetPoint(F)          | 75.0    |
| Cooling Setup Thermostat     | Present |
| DHW SetPoint(F)              | 125.0   |

## Heat: 96 AFUE

|                               |                             |
|-------------------------------|-----------------------------|
| SystemType                    | Fuel-fired air distribution |
| Fuel Type                     | Natural gas                 |
| Rated Output Capacity (kBtuh) | 32.0                        |
| Seasonal Equipment Efficiency | 96.0 AFUE                   |
| Auxiliary Electric            | 371 Watts                   |
| Note                          |                             |
| Number Of Units               | 1                           |
| Location                      | Conditioned area            |
| Performance Adjustment        | 100                         |
| Percent Load Served           | 100                         |

## DHW: 0.8 EF

|                                 |                  |
|---------------------------------|------------------|
| Water Heater Type               | Conventional     |
| Fuel Type                       | Natural gas      |
| Energy Factor                   | 0.80             |
| Recovery Efficiency             | 0.84             |
| Water Tank Size (gallons)       | 50               |
| Extra Tank Insulation (R-Value) | 0.0              |
| Note                            |                  |
| Number Of Units                 | 1                |
| Location                        | Conditioned area |
| Performance Adjustment          | 100              |
| Percent Load Served             | 100              |

## Cool: 13SEER A/C 1.5 ton

# Building Summary

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Rater ID:0001

Weather:Toronto, ON\_CAN

Model 32-02 - a1 ref

Model 32-02 - a1 ref.blg

## Builder

Royal Pine Homes

## Mechanical Equipment

|                               |                  |
|-------------------------------|------------------|
| System Type                   | Air conditioner  |
| Fuel Type                     | Electric         |
| Rated Output Capacity (kBtuh) | 18.0             |
| Seasonal Equipment Efficiency | 13.0 SEER        |
| Sensible Heat Fraction (SHF)  | 0.70             |
| Note                          |                  |
| Number Of Units               | 1                |
| Location                      | Conditioned area |
| Performance Adjustment        | 100              |
| Percent Load Served           | 100              |

## DHW Efficiencies

|                                      |                        |
|--------------------------------------|------------------------|
| All bath faucets & showers <= 2gpm   | false                  |
| All DHW pipes fully insulated >= R-3 | false                  |
| Recirculation type                   | None (standard system) |
| Farthest fixture to DHW heater       | 66                     |
| TOTAL Pipelength for longest DHW run | 96                     |
| DWHR unit present?                   | true                   |
| DWHR unit efficiency per CSA 55.1    | 42.00                  |
| DWHR preheats cold supply for shower | false                  |
| DWHR preheats hot supply for shower  | true                   |
| Number showerheads in home           | 2                      |
| Number showers connected to DWHR     | 2                      |

## DHW Diagnostics

|                          |       |
|--------------------------|-------|
| dhwGpd                   | 58.83 |
| peRatio                  | 1.00  |
| dishwasherGpd            | 5.10  |
| clothesWasherHotWaterGPD | 4.48  |
| EDef                     | 1.00  |
| ewaste                   | 32.00 |
| tmains                   | 54.00 |
| dwHrWhInletTempAdj       | 8.44  |
| pumpConsKwh              | 0.00  |

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## DHW Efficiencies

pumpConsMmbtu

0.00

# Building Summary

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, ON\_CAN

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Weather:Toronto, ON\_CAN

Model 32-02 - a1 ref  
Model 32-02 - a1 ref.blg

## Builder

Royal Pine Homes

## Duct Systems

### Name

|                                 |                    |
|---------------------------------|--------------------|
| Conditioned Floor Area(sq ft)   | 3299.0             |
| # of Returns                    | 5                  |
| Heating System                  | 96 AFUE            |
| Cooling System                  | 13SEER A/C 1.5 ton |
| Supply Duct Surface Area(sq ft) | 668.0              |
| Return Duct Surface Area(sq ft) | 618.6              |
| No bldg cavities used as ducts  | FALSE              |

| Type   | Location          | Percent Location | R-Value |
|--------|-------------------|------------------|---------|
| Supply | Conditioned space | 100.0            | 0.0     |
| Return | Conditioned space | 100.0            | 0.0     |

### Test Exemptions

|                 |       |
|-----------------|-------|
| IECC            | TRUE  |
| RESNET 2019     | FALSE |
| ENERGY STAR LtO | TRUE  |

### Duct Leakage

|                 |                       |
|-----------------|-----------------------|
| Input Type      | Measured              |
| Test Type       | Total Duct Leakage    |
| Duct Test Stage | Postconstruction Test |

|                 | LtO (based on Total DL) | Total Duct Leakage    |
|-----------------|-------------------------|-----------------------|
| Supply & Return | 0.10 CFM @ 25 Pascals   | 0.10 CFM @ 25 Pascals |
| Supply Only     | Not Applicable          |                       |
| Return Only     | Not Applicable          |                       |

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## Builder

Royal Pine Homes

## Infiltration and Mechanical Ventilation

### Whole Dwelling Infiltration

|                                   |                     |
|-----------------------------------|---------------------|
| Input Type                        | Blower door         |
| Heating Season Infiltration Value | 0.26 CFM50/sf shell |
| Cooling Season Infiltration Value | 0.26 CFM50/sf shell |
| Shelter Class                     | 4                   |
| Code Verification                 | Tested              |

### Mechanical Ventilation for IAQ

|                                          |          |
|------------------------------------------|----------|
| Type                                     | Balanced |
| Unable to Measure Mechanical Ventilation | FALSE    |
| Rate(cfm)                                | 63       |
| Adjusted Sensible Recovery Efficiency(%) | 75.00    |
| Adjusted Total Recovery Efficiency(%)    | 0.00     |
| Hours per Day                            | 24.0     |
| Fan Power (watts)                        | 63.00    |
| ECM Fan Motor                            | false    |

### Ventilation Strategy for Cooling

|                            |                     |
|----------------------------|---------------------|
| Cooling Season Ventilation | Natural Ventilation |
|----------------------------|---------------------|

|                                    |    |
|------------------------------------|----|
| Good Air Exchange for Multi-Family | NA |
|------------------------------------|----|

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Model 32-02 - a1 ref  
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## Builder

Royal Pine Homes

## Lights and Appliances

### Rating/RESNET audit

|                        |             |
|------------------------|-------------|
| Ceiling Fan CFM / Watt | 0.00        |
| Refrigerator kWh/yr    | 691         |
| Refrigerator Location  | Conditioned |
| Range/Oven Fuel Type   | Electric    |
| Induction Range        | No          |
| Convection Oven        | No          |

### Dishwasher

|                        |      |
|------------------------|------|
| Energy Factor          | 0.46 |
| Dishwasher kWh/yr      | 0    |
| Place Setting Capacity | 12   |

### Clothes Dryer

|                  |             |
|------------------|-------------|
| Fuel Type        | Electric    |
| Location         | Conditioned |
| Moisture Sensing | No          |
| CEF              | 2.62        |

### Clothes Washer

|                  |             |
|------------------|-------------|
| Location         | Conditioned |
| LER (kWh/yr)     | 704         |
| IMEF             | 0.331       |
| Capacity (CU.Ft) | 2.874       |
| Electricity Rate | 0.08        |
| Gas Rate         | 0.58        |
| Annual Gas Cost  | 23.00       |

### Qualifying Light Fixtures

|                   |     |
|-------------------|-----|
| Interior Lights % | 0.0 |
| Exterior Lights % | 0.0 |
| Garage Lights %   | 0.0 |
| Interior LEDs %   | 0.0 |
| Exterior LEDs %   | 0.0 |
| Garage LEDs %     | 0.0 |

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# Building Summary

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Projected Rating  
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Rater ID:0001

Weather:Toronto, ON\_CAN  
Model 32-02  
Model 32-02.blg

## Builder

Royal Pine Homes

## Property/Builder Information

|                                        |                  |
|----------------------------------------|------------------|
| Building Name                          | Model 32-02      |
| Owner's Name                           | Royal Pine Homes |
| Property Address                       | Model 32-02      |
| City, St, Zip                          | , ON_CAN         |
| Phone Number                           |                  |
| Builder's Name                         | Royal Pine Homes |
| Phone Number                           |                  |
| Email Address                          |                  |
| Plan/Model Name                        | Model 32-02      |
| Community/Development Identifier/Other |                  |

## Organization Information

|                   |                         |
|-------------------|-------------------------|
| Organization Name | Clearsphere Consulting  |
| Address           | 1632 O'Connor Dr.       |
| City, St, Zip     | Toronto, ON_CAN M4B 3P4 |
| Phone Number      | 416-481-4218            |
| Website           | www.clearsphere.ca      |

## Rating/RESNET Information

|                          |                       |
|--------------------------|-----------------------|
| Provider ID              | 2006-001              |
| Sample Set ID            | 00000000              |
| Registry ID              |                       |
| Registry Date Registered |                       |
| Rater's Name             | John Godden           |
| Rater's ID               | 0001                  |
| Rater's Email            | howard@clearsphere.ca |
| Last Field Insp          |                       |
| Rating Type              | Projected Rating      |
| Reason for Rating        | New Home              |
| Rating Number            | N/A                   |
| Rating Permit Date       | 06/19/2024            |

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Projected Rating  
Rating No:N/A  
Rater ID:0001

Weather:Toronto, ON\_CAN

Model 32-02  
Model 32-02.blg

## Builder

Royal Pine Homes

## General Building Information

|                                                  |                        |
|--------------------------------------------------|------------------------|
| Area of Conditioned. Space(sq ft)                | 3299                   |
| Volume of Conditioned. Space                     | 29956                  |
| Year Built                                       | 2024                   |
| Housing Type                                     | Single-family detached |
| Level Type(Apartments Only)                      | None                   |
| Floors on or Above-Grade                         | 2                      |
| Number of Bedrooms                               | 4                      |
| Foundation Type                                  | Conditioned basement   |
| Foundation is w/in Infiltration Volume:          | N/A                    |
| Enclosed Crawl Space Type                        | N/A                    |
| Number of Stories Including Conditioned Basement | 3                      |
| Thermal Boundary Location                        | N/A                    |

## Foundation Wall Information

| Name            | Library Entry       | Location         | Length(ft) | Total Height(ft) | Depth Below Grade(ft) | Height Above Grade(ft) | Uo Value Combo* | Uo Value (wall only) |
|-----------------|---------------------|------------------|------------|------------------|-----------------------|------------------------|-----------------|----------------------|
| Foundation Wall | R-20ci Blanket Code | Cond->ambient/gm | 153.50     | 8.25             | 7.42                  | 0.83                   | 0.038           | 0.139                |

\* Uo Value Combo combines wall, airfilm, and soil path

## Foundation Wall Library List

### Foundation Wall: R-20ci Blanket Code

|                         |                             |
|-------------------------|-----------------------------|
| Type                    | Solid concrete or stone     |
| Thickness(in)           | 8.0                         |
| Studs                   | None                        |
| Interior Insulation     |                             |
| Continuous R-Value      | 20.0                        |
| Frame Cavity R-Value    | 0.0                         |
| Cavity Insulation Grade | 3                           |
| Ins top                 | 0.00 ft from top of wall    |
| Ins Bottom              | 0.50 ft from bottom of wall |
| Exterior Insulation     |                             |
| R-Value                 | 0.0                         |

# Building Summary

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Model 32-02  
Model 32-02.blg

## Builder

Royal Pine Homes

## Foundation Wall Library List

|            |                          |
|------------|--------------------------|
| Ins top    | 0.00 ft from top of wall |
| Ins bottom | 0.00 ft below grade      |

Note

## Slab Floor Information

| Name | Library Entry | Area(sq ft) | Depth Below<br>Grade(ft) | Full<br>Perimeter(ft) | Exposed<br>Perimeter(ft) | On-Grade<br>Perimeter(ft) |
|------|---------------|-------------|--------------------------|-----------------------|--------------------------|---------------------------|
| Slab | Uninsulated   | 1026        | 7.42                     | 154                   | 154                      | 0                         |

## Slab Floor Library List

### Slab Floor: Uninsulated

|                                  |        |
|----------------------------------|--------|
| Slab Covering                    | Carpet |
| Perimeter Insulation (R-Value)   | 0.0    |
| Perimeter Insulation Depth (ft)  | 0.0    |
| Under-Slab Insulation (R-Value)  | 0.0    |
| Under-Slab Insulation Width (ft) | 0.0    |
| Slab Insulation Grade            | 1      |
| Radiant Slab                     | No     |

Note

## Frame Floor Information

| Name          | Library Entry | Location           | Area(sq ft) | Uo Value |
|---------------|---------------|--------------------|-------------|----------|
| Exposed floor | R-31 Std      | Btwn cond & garage | 223         | 0.046    |

## Frame Floor Library List

Floor: R-31 Std

Information From Quick Fill Screen

|                                   |            |
|-----------------------------------|------------|
| Continous Insulation R-Value      | 0.0        |
| Cavity Insulation R-Value         | 31.0       |
| Cavity Insulation Thickness (in.) | 11.5       |
| Cavity Insulation Grade           | 3          |
| Joist Size (w x h, in)            | 1.5 x 11.5 |
| Joist Spacing (in oc)             | 16.0       |
| Framing Factor - (default)        | 0.1300     |

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**Builder**  
Royal Pine Homes

## Frame Floor Library List

Floor Covering CARPET  
Note

## Rim and Band Joist Information

| Name           | Location        | Area(sq ft) | Continuous Ins | Framed Cavity Ins | Cavity Ins Thk(in) | Joist Spacing | Insulation Grade | Uo Value |
|----------------|-----------------|-------------|----------------|-------------------|--------------------|---------------|------------------|----------|
| Rim Band Joist | Cond -> ambient | 254.10      | 1.5            | 22.0              | 5.5                | 16.0          | 3                | 0.056    |

## Above-Grade Wall

| Name | Library Entry | Location        | Exterior Color | Area(sq ft) | Uo Value |
|------|---------------|-----------------|----------------|-------------|----------|
| AGW  | R-22+1.5ci    | Cond -> ambient | Medium         | 2741.20     | 0.058    |

## Above-Grade Wall Library List

### Above-Grade Wall: R-22+1.5ci

Information From Quick Fill Screen

|                                        |                          |
|----------------------------------------|--------------------------|
| Wall Construction Type                 | Std Frame w/Brick Veneer |
| Continuous Insulation (R-Value)        | 1.5                      |
| Frame Cavity Insulation (R-Value)      | 22.0                     |
| Frame Cavity Insulation Thickness (in) | 5.5                      |
| Frame Cavity Insulation Grade          | 3                        |
| Stud Size (w x d, in)                  | 1.5 x 5.5                |
| Stud Spacing (in o.c.)                 | 16.0                     |
| Framing Factor - (default)             | 0.2300                   |
| Gypsum Thickness (in)                  | 0.5                      |
| Note                                   |                          |

## Window Information

| Name  | Wall Assignment | Orient | U-Value | SHGC  | Area (sqft) | Overhang   |             |             | Interior       |                | Adjacent       |                |
|-------|-----------------|--------|---------|-------|-------------|------------|-------------|-------------|----------------|----------------|----------------|----------------|
|       |                 |        |         |       |             | Depth (ft) | To Top (ft) | To Btm (ft) | Winter Shading | Summer Shading | Winter Shading | Summer Shading |
| front | AGWall 1        | South  | 0.282   | 0.450 | 15.90       | 0.0        | 0.0         | 0.0         | 0.85           | 0.70           | None           | None           |
| front | AGWall 1        | South  | 0.282   | 0.450 | 5.33        | 0.0        | 0.0         | 0.0         | 0.85           | 0.70           | None           | None           |
| front | AGWall 1        | South  | 0.282   | 0.450 | 30.00       | 0.0        | 0.0         | 0.0         | 0.85           | 0.70           | None           | None           |

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Model 32-02.blg

**Builder**  
Royal Pine Homes

## Window Information

| Name       | Wall Assignment | Orient | U-Value | SHGC  | Area (sqft) | Overhang   |             |             | Interior       |                | Adjacent       |                |
|------------|-----------------|--------|---------|-------|-------------|------------|-------------|-------------|----------------|----------------|----------------|----------------|
|            |                 |        |         |       |             | Depth (ft) | To Top (ft) | To Btm (ft) | Winter Shading | Summer Shading | Winter Shading | Summer Shading |
| front      | AGWall 1        | South  | 0.282   | 0.450 | 28.00       | 0.0        | 0.0         | 0.0         | 0.85           | 0.70           | None           | None           |
| front      | AGWall 1        | South  | 0.282   | 0.450 | 24.50       | 0.0        | 0.0         | 0.0         | 0.85           | 0.70           | None           | None           |
| front      | AGWall 1        | South  | 0.282   | 0.450 | 27.50       | 0.0        | 0.0         | 0.0         | 0.85           | 0.70           | None           | None           |
| front Door | AGWall 1        | South  | 0.282   | 0.450 | 10.00       | 0.0        | 0.0         | 0.0         | 0.85           | 0.70           | None           | None           |
| side       | FndWall 1       | East   | 0.282   | 0.450 | 16.00       | 0.0        | 0.0         | 0.0         | 0.85           | 0.70           | None           | None           |
| side       | AGWall 1        | East   | 0.282   | 0.450 | 34.00       | 0.0        | 0.0         | 0.0         | 0.85           | 0.70           | None           | None           |
| side       | AGWall 1        | East   | 0.282   | 0.450 | 22.70       | 0.0        | 0.0         | 0.0         | 0.85           | 0.70           | None           | None           |
| side       | AGWall 1        | East   | 0.282   | 0.450 | 8.00        | 0.0        | 0.0         | 0.0         | 0.85           | 0.70           | None           | None           |
| side       | AGWall 1        | East   | 0.282   | 0.450 | 17.33       | 0.0        | 0.0         | 0.0         | 0.85           | 0.70           | None           | None           |
| back       | FndWall 1       | North  | 0.282   | 0.450 | 8.00        | 0.0        | 0.0         | 0.0         | 0.85           | 0.70           | None           | None           |
| back       | AGWall 1        | North  | 0.282   | 0.450 | 47.00       | 0.0        | 0.0         | 0.0         | 0.85           | 0.70           | None           | None           |
| back       | AGWall 1        | North  | 0.282   | 0.450 | 45.33       | 0.0        | 0.0         | 0.0         | 0.85           | 0.70           | None           | None           |
| back       | AGWall 1        | North  | 0.282   | 0.450 | 17.33       | 0.0        | 0.0         | 0.0         | 0.85           | 0.70           | None           | None           |
| back       | AGWall 1        | North  | 0.282   | 0.450 | 37.33       | 0.0        | 0.0         | 0.0         | 0.85           | 0.70           | None           | None           |

## Door Information

| Name        | Library Entry | Wall Assignment | Opaque Area(sq ft) | Uo Value | R-Value of Opaque Area | Storm Door |
|-------------|---------------|-----------------|--------------------|----------|------------------------|------------|
| Front       | Code          | AGWall 1        | 10.0               | 0.203    | 4.0                    | No         |
| garage      | Code          | AGWall 1        | 21.0               | 0.203    | 4.0                    | No         |
| side        | Code          | AGWall 1        | 21.0               | 0.203    | 4.0                    | No         |
| Cold Cellar | Code          | FndWall 1       | 21.0               | 0.203    | 4.0                    | No         |

## Roof Information

| Name               | Library Entry | Ceiling Area(sq ft) | Roof Area(sq ft) | Exterior Color | Radiant Barrier | Type  | Uo Value | Cement or Clay Tiles | Roof Tile Ventilation |
|--------------------|---------------|---------------------|------------------|----------------|-----------------|-------|----------|----------------------|-----------------------|
| Ceiling-with attic | R-60 Attic    | 1247.00             | 1558.75          | Dark           | No              | Attic | 0.017    | No                   | No                    |

## Roof Library List

Ceiling: R-60 Attic

REM/Rate - Residential Energy Analysis and Rating Software v16.0.2 Canada

This information does not constitute any warranty of energy costs or savings.

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# Building Summary

**Property**

Royal Pine Homes  
Model 32-02  
, ON\_CAN

**Organization**

Clearsphere Consulting  
416-481-4218  
John Godden

**HERS**

Projected Rating  
Rating No:N/A  
Rater ID:0001

Weather:Toronto, ON\_CAN  
Model 32-02  
Model 32-02.blg

**Builder**

Royal Pine Homes

## Roof Library List

Information From Quick Fill Screen

|                                     |           |
|-------------------------------------|-----------|
| Continous Insulation (R-Value)      | 46.0      |
| Cavity Insulation (R-Value)         | 14.0      |
| Cavity Insulation Thickness (in)    | 3.5       |
| Cavity Insulation Grade             | 3         |
| Gypsum Thickness (in)               | 0.500     |
| Insulated Framing Size(w x h, in)   | 1.5 x 3.5 |
| Insulated Framing Spacing (in o.c.) | 24.0      |
| Framing Factor - (default)          | 0.1100    |
| Ceiling Type                        | Attic     |
| Note                                |           |

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Royal Pine Homes

## Mechanical Equipment

|                              |         |
|------------------------------|---------|
| Number of Mechanical Systems | 3       |
| Heating SetPoint(F)          | 72.0    |
| Heating Setback Thermostat   | Present |
| Cooling SetPoint(F)          | 75.0    |
| Cooling Setup Thermostat     | Present |
| DHW SetPoint(F)              | 125.0   |

## Heat: 96 AFUE

|                               |                             |
|-------------------------------|-----------------------------|
| SystemType                    | Fuel-fired air distribution |
| Fuel Type                     | Natural gas                 |
| Rated Output Capacity (kBtuh) | 32.0                        |
| Seasonal Equipment Efficiency | 96.0 AFUE                   |
| Auxiliary Electric            | 371 Watts                   |
| Note                          |                             |
| Number Of Units               | 1                           |
| Location                      | Conditioned area            |
| Performance Adjustment        | 100                         |
| Percent Load Served           | 100                         |

## DHW: 0.9 EF Condensing

|                                 |                  |
|---------------------------------|------------------|
| Water Heater Type               | Conventional     |
| Fuel Type                       | Natural gas      |
| Energy Factor                   | 0.90             |
| Recovery Efficiency             | 0.90             |
| Water Tank Size (gallons)       | 50               |
| Extra Tank Insulation (R-Value) | 0.0              |
| Note                            |                  |
| Number Of Units                 | 1                |
| Location                        | Conditioned area |
| Performance Adjustment          | 100              |
| Percent Load Served             | 100              |

## Cool: 13SEER A/C 1.5 ton

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Royal Pine Homes

## Mechanical Equipment

|                               |                  |
|-------------------------------|------------------|
| System Type                   | Air conditioner  |
| Fuel Type                     | Electric         |
| Rated Output Capacity (kBtuh) | 18.0             |
| Seasonal Equipment Efficiency | 13.0 SEER        |
| Sensible Heat Fraction (SHF)  | 0.70             |
| Note                          |                  |
| Number Of Units               | 1                |
| Location                      | Conditioned area |
| Performance Adjustment        | 100              |
| Percent Load Served           | 100              |

## DHW Efficiencies

|                                      |                        |
|--------------------------------------|------------------------|
| All bath faucets & showers <= 2gpm   | false                  |
| All DHW pipes fully insulated >= R-3 | false                  |
| Recirculation type                   | None (standard system) |
| Farthest fixture to DHW heater       | 66                     |
| TOTAL Pipelength for longest DHW run | 96                     |
| DWHR unit present?                   | true                   |
| DWHR unit efficiency per CSA 55.1    | 53.30                  |
| DWHR preheats cold supply for shower | false                  |
| DWHR preheats hot supply for shower  | true                   |
| Number showerheads in home           | 1                      |
| Number showers connected to DWHR     | 1                      |

## DHW Diagnostics

|                          |       |
|--------------------------|-------|
| dhwGpd                   | 57.95 |
| peRatio                  | 1.00  |
| dishwasherGpd            | 5.10  |
| clothesWasherHotWaterGPD | 4.48  |
| EDeff                    | 1.00  |
| ewaste                   | 32.00 |
| tmains                   | 54.00 |
| dwHrWhInletTempAdj       | 10.72 |
| pumpConsKwh              | 0.00  |

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## DHW Efficiencies

pumpConsMmbtu

0.00

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Royal Pine Homes

## Duct Systems

### Name

|                                 |                    |
|---------------------------------|--------------------|
| Conditioned Floor Area(sq ft)   | 3299.0             |
| # of Returns                    | 5                  |
| Heating System                  | 96 AFUE            |
| Cooling System                  | 13SEER A/C 1.5 ton |
| Supply Duct Surface Area(sq ft) | 668.0              |
| Return Duct Surface Area(sq ft) | 618.6              |
| No bldg cavities used as ducts  | FALSE              |

| Type   | Location          | Percent Location | R-Value |
|--------|-------------------|------------------|---------|
| Supply | Conditioned space | 100.0            | 0.0     |
| Return | Conditioned space | 100.0            | 0.0     |

### Test Exemptions

|                 |       |
|-----------------|-------|
| IECC            | TRUE  |
| RESNET 2019     | FALSE |
| ENERGY STAR LtO | TRUE  |

### Duct Leakage

|                 |                       |
|-----------------|-----------------------|
| Input Type      | Measured              |
| Test Type       | Total Duct Leakage    |
| Duct Test Stage | Postconstruction Test |

|                 | LtO (based on Total DL) | Total Duct Leakage    |
|-----------------|-------------------------|-----------------------|
| Supply & Return | 0.10 CFM @ 25 Pascals   | 0.10 CFM @ 25 Pascals |
| Supply Only     | Not Applicable          |                       |
| Return Only     | Not Applicable          |                       |

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## Builder

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## Infiltration and Mechanical Ventilation

### Whole Dwelling Infiltration

|                                   |                     |
|-----------------------------------|---------------------|
| Input Type                        | Blower door         |
| Heating Season Infiltration Value | 0.26 CFM50/sf shell |
| Cooling Season Infiltration Value | 0.26 CFM50/sf shell |
| Shelter Class                     | 4                   |
| Code Verification                 | Tested              |

### Mechanical Ventilation for IAQ

|                                          |          |
|------------------------------------------|----------|
| Type                                     | Balanced |
| Unable to Measure Mechanical Ventilation | FALSE    |
| Rate(cfm)                                | 63       |
| Adjusted Sensible Recovery Efficiency(%) | 75.00    |
| Adjusted Total Recovery Efficiency(%)    | 0.00     |
| Hours per Day                            | 24.0     |
| Fan Power (watts)                        | 63.00    |
| ECM Fan Motor                            | false    |

### Ventilation Strategy for Cooling

|                            |                     |
|----------------------------|---------------------|
| Cooling Season Ventilation | Natural Ventilation |
|----------------------------|---------------------|

|                                    |    |
|------------------------------------|----|
| Good Air Exchange for Multi-Family | NA |
|------------------------------------|----|

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## Lights and Appliances

### Rating/RESNET audit

|                        |             |
|------------------------|-------------|
| Ceiling Fan CFM / Watt | 0.00        |
| Refrigerator kWh/yr    | 691         |
| Refrigerator Location  | Conditioned |
| Range/Oven Fuel Type   | Electric    |
| Induction Range        | No          |
| Convection Oven        | No          |

### Dishwasher

|                        |      |
|------------------------|------|
| Energy Factor          | 0.46 |
| Dishwasher kWh/yr      | 0    |
| Place Setting Capacity | 12   |

### Clothes Dryer

|                  |             |
|------------------|-------------|
| Fuel Type        | Electric    |
| Location         | Conditioned |
| Moisture Sensing | No          |
| CEF              | 2.62        |

### Clothes Washer

|                  |             |
|------------------|-------------|
| Location         | Conditioned |
| LER (kWh/yr)     | 704         |
| IMEF             | 0.331       |
| Capacity (CU.Ft) | 2.874       |
| Electricity Rate | 0.08        |
| Gas Rate         | 0.58        |
| Annual Gas Cost  | 23.00       |

### Qualifying Light Fixtures

|                   |     |
|-------------------|-----|
| Interior Lights % | 0.0 |
| Exterior Lights % | 0.0 |
| Garage Lights %   | 0.0 |
| Interior LEDs %   | 0.0 |
| Exterior LEDs %   | 0.0 |
| Garage LEDs %     | 0.0 |

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