

QA Genie Lessons Learned

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Presentation Agenda

- Introduction to QA Genie
- Common Flags
- Common QA Findings
- Interpretation Needs
- QA Genie: 2018 and Beyond
- Q&A



Introduction

- Purpose of QA Genie



Setting the Standards for
Home Energy Efficiency

Introduction

- QAG Basic Functions
 - Rating Data Parsed
 - Data Analyzed for Outliers/Anomalies
 - Some Outliers are Hard-Coded
 - Additional Detection of Outliers “in Cluster”

QAG Interface

QA Genie Administration

Manage Flags

Evaluate Rating

View Reports

Flag Report

Rating Reports

Provider Report

Rater Report

DOC Report

Manage Users

Administration Home

Rater Report

Reports

[← Back to Admin Home](#)

Search Filter

Date Range:  to 

Registration Type:

Home Type:

Climate Zone:

Filter [View All](#)

Show entries

Most Common Flags

- Ratings in One Day



File Building View Extras Libraries Reports Tools Help

Energy Rating Information:

Last Field Insp (yyyy-mm-dd): 02/22/2018

Rating Type: Sampled

Reason For Rating: New Home

Rating Number: xxxxxxxxxxxx

Rating Verification:

Provider ID (AIN): 00-000 Registry ID:

Sampled Set ID: 00000000 Registry Date:

Official Rater ID (RTIN)

Oakland Rater 00000000

Raters/Rating Field Inspectors ID (RTIN or RFI)

Ray Ting Field Inspector 000000

Most Common Flags

- Mechanical Equipment Set to Default EAE

Heating Type Library

Component	State
912SC48080S17	
912SC60100S21	
ML193UH070XP36B	
ML193UH090XP48C	
R92PA0851521MSA	
TUC1B080A9421A	
## FURNACES ##	
## ARMSTRONG AIR	
A93UH1D070B12A	
A95DF1D045B12	
A95UH1D070B12A	

Name: R92PA0851521MSA Desuperheater

System Type: Fuel-fired air distribution

Fuel Type: Natural gas

Rated Output Capacity (kBtu/h): 78.0

Seasonal Equipment Efficiency: 92.0 AFUE

Auxiliary Electric Use: 735 Eae Use Default

Heat Pump - Auxiliary Inputs

Fan Power (Watts): 0 Use Default

Pump Energy: 0 Watts

Note: Rheem

OK Cancel Help

Heating Type Library

Component	State
912SC48080S17	
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Seasonal Equipment Efficiency: 92.0 AFUE

Auxiliary Electric Use: 1091 Eae Use Default

Heat Pump - Auxiliary Inputs

Fan Power (Watts): 0 Use Default

Pump Energy: 0 Watts

Note: Rheem

OK Cancel Help

Most Common Flags

- No Window Overhangs



Most Common RED Flags

Wall Framing Factor 	35.93%
Duct LTO Testing Repeat Values 	19.31%
Climate Zone 	11.71%
Ventilation Fan Watts 	6.15%
Blower Door Testing Repeat Values 	4.91%
Window SHGC Value(s) 	4.54%
Window Interior Shading 	4.23%
Water Heater EF 	3.54%
Sealed Attic Ceiling Area-to-Attic Exterior Ratio 	2.35%
Water Heater EF 	2.15%
Window-to-Wall Ratio 	2.10%
Water Heater EF 	1.99%
Refrigerator kWh/yr 	1.81%
Door-to-Wall Ratio 	1.42%
Door-to-Floor Ratio 	1.21%
Window U-value(s) 	1.20%
Furnace AFUE 	0.72%



Setting the Standards for
Home Energy Efficiency

Most Common RED Flags

- Wall Framing Factor



EnergyGauge USA

Contents Index Search

- Project
- Project Notebook
- Project Search
- Rating Guide Summary
- Roof
- Solar Hot Water
- Sunspace
- Surroundings
- System Sizing Summary
- Temperatures
- Tested Infiltration Options
- Tested Leakage Types
- Thermal Resistances of
- Walls
 - Walls
 - Exterior_characteristics
 - Wall_Adjacent_To
 - Wall_Area
 - Wall_Cavity
 - Wall_char_framing
 - Wall_ID_comment
 - Wall_char_solar
 - Wall_ID_Type
 - Wall_Insulation_R
 - Wall_Insulation_Gr
 - Wall_Insulation_R
 - Wall_Orientation
 - Wall_Overview
 - Walls_Sheathing_F
 - Walls_Current
 - Walls_area
- Windows
- Worst Case Summary F

Framing Fractions

The following table provides a detailed summary of wall, floor and ceiling framing fractions. Simplified tables are provided within the [Walls](#), [Floors](#), [Ceilings](#), and [Roof](#) component Help sections.

Framing Fractions:

	length (ft.)	width (in. o.c.)	area (sq.in.)	fr.width (in.)	main fr. (sq.in.)	plates (No.)	bridging (sq.in.)	subtot (sq.in.)	sub. frac. (% area)	misc.* (% area)	tot. frac (% area)	
Walls (std):												
@16" o.c.	8	16	1536	1.5	144	3	72	21.75	237.75	15.5%	7.5%	23%
@24" o.c.	8	24	2304	1.5	144	3	108	33.75	285.75	12.4%	7.5%	20%
@16" o.c.	10	16	1920	1.5	180	3	72	21.75	273.75	14.3%	7.5%	22%
@24" o.c.	10	24	2880	1.5	180	3	108	33.75	321.75	11.2%	7.5%	19%
Walls (advanced):												
@16" o.c.	8	16	1536	1.5	144	2	48	21.75	213.75	13.9%	5.0%	19%
@24" o.c.	8	24	2304	1.5	144	2	72	33.75	249.75	10.8%	5.0%	16%
@16" o.c.	10	16	1920	1.5	180	2	48	21.75	249.75	13.0%	5.0%	18%
@24" o.c.	10	24	2880	1.5	180	2	72	33.75	285.75	9.9%	5.0%	15%
Wall SIPs	8	48	4608	1.5	144	2	144	0	288	6.3%	4.0%	10%
Floors (std):												

Most Common Findings

- Rounding

File Building View Extras Libraries Reports Tools Help

Whole House Infiltration

Measurement Type: Blower door test

Heating Season Infiltration Value: 2100

Cooling Season Infiltration Value: 2100

Shelter Class: 4

Code Verification: Tested

Mechanical Ventilation System for IAQ

Type: Exhaust Only

Sensible Recovery Efficiency (%): 0.0

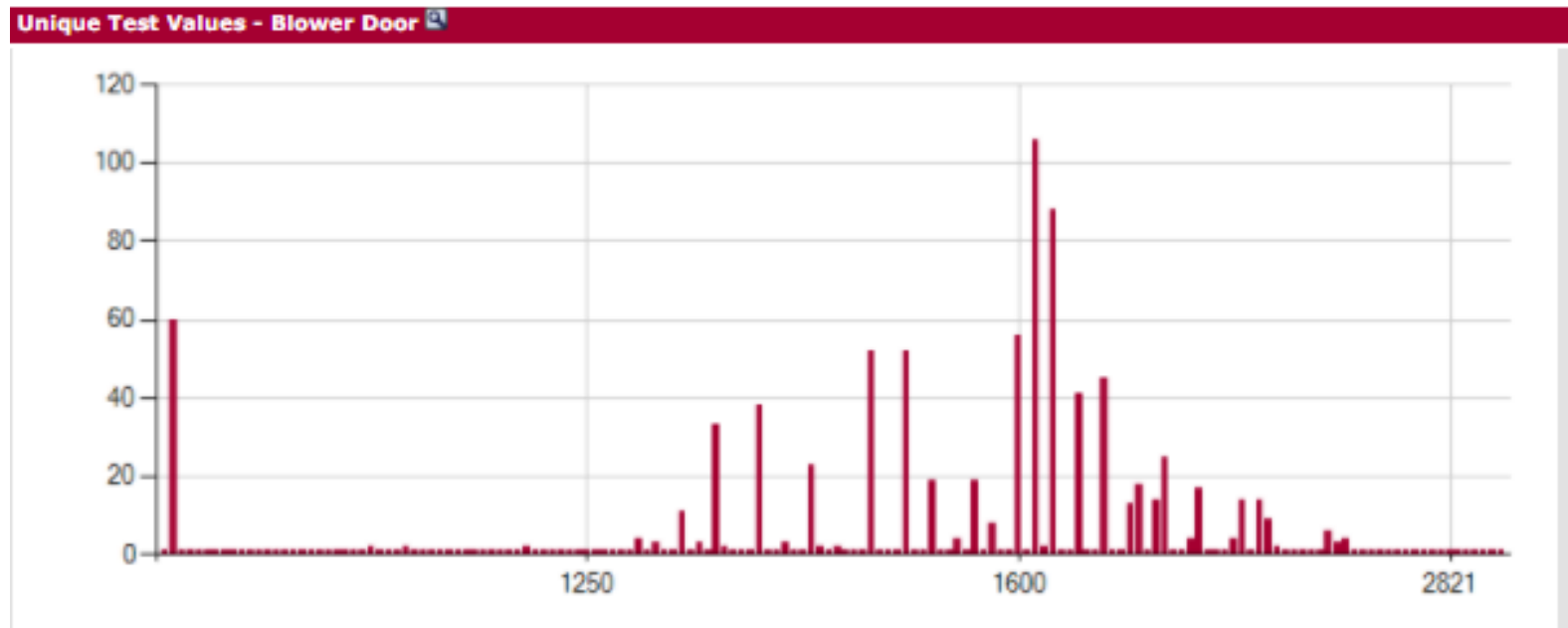
Total Recovery Efficiency (%): 0.0

Rate (cfm): 0

Hours/Day: 24.0

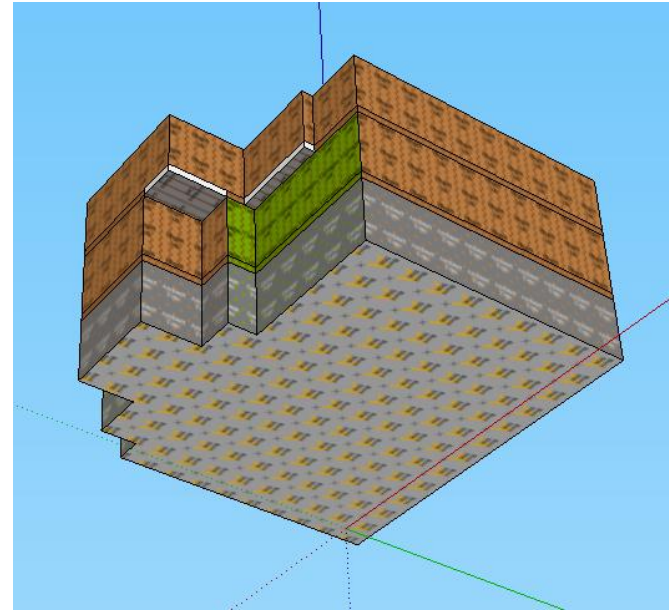
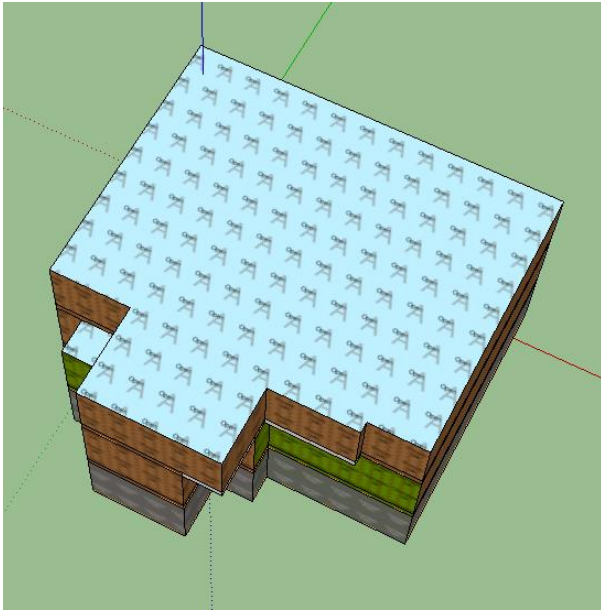
Most Common Findings

- Repeat Test Values



Most Common Findings

- Ratio of Slab and Framed Floors (Footprint) to Roof/Ceiling Areas



Most Common Findings

- Utility Rates

EnergyGauge USA - New Project

File View Calculate Reports Registration Support Help Improvement Analysis

Project ID: 12 User Entry Mode

State:

Fuel Cost Data

Fuel	Unit	Utility Name	Insert/Delete Utility	Cost Method	\$/Unit
Electricity	kWh	<input type="text" value="EnergyGauge Default"/>	<input type="text" value="Electricity"/>	<input type="text" value="Standard"/>	000.1126
Natural Gas	Therm	<input type="text" value="EnergyGauge Default"/>	<input type="text" value="Natural Gas"/>	<input type="text" value="Standard"/>	000.682
Fuel Oil	Gallon	<input type="text" value="EnergyGauge Default"/>	<input type="text" value="Fuel Oil"/>		001.1
Propane	Gallon	<input type="text" value="EnergyGauge Default"/>	<input type="text" value="Propane"/>		001.4

Site Info Rating Info **Utility Rates**

Name Fuel Type

Period	Min kWh	Max kWh	cents/kWh
<input type="text" value="** 6-9 *"/>	<input type="text" value="0"/>	<input type="text" value="800"/>	<input type="text" value="13.31"/>
Service Charge [\$ /month]	<input type="text" value="10"/>		
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="button" value="Add Tier"/>			

Period	Min kWh	Max kWh	cents/kWh
<input type="text" value="** 1-5,10-12 *"/>	<input type="text" value="0"/>	<input type="text" value="800"/>	<input type="text" value="13.31"/>
Service Charge [\$ /month]	<input type="text" value="10"/>		
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="button" value="Add Tier"/>			

Most Common Findings

- Ventilation Fan Watts

Mechanical Ventilation System for IAQ

Type: **Air Cycler**

Sensible Recovery Efficiency (%): 0.0

Total Recovery Efficiency (%): 0.0

Rate (cfm): 110

Hours/Day: 8.0

Fan watts: **60.0** ECM Fan Motor?

Usage of Operable Windows

Cooling Season Strategy: Natural Ventilation

Interpretation/Clarification Needs

- # Stories Above Grade



Interpretation/Clarification Needs

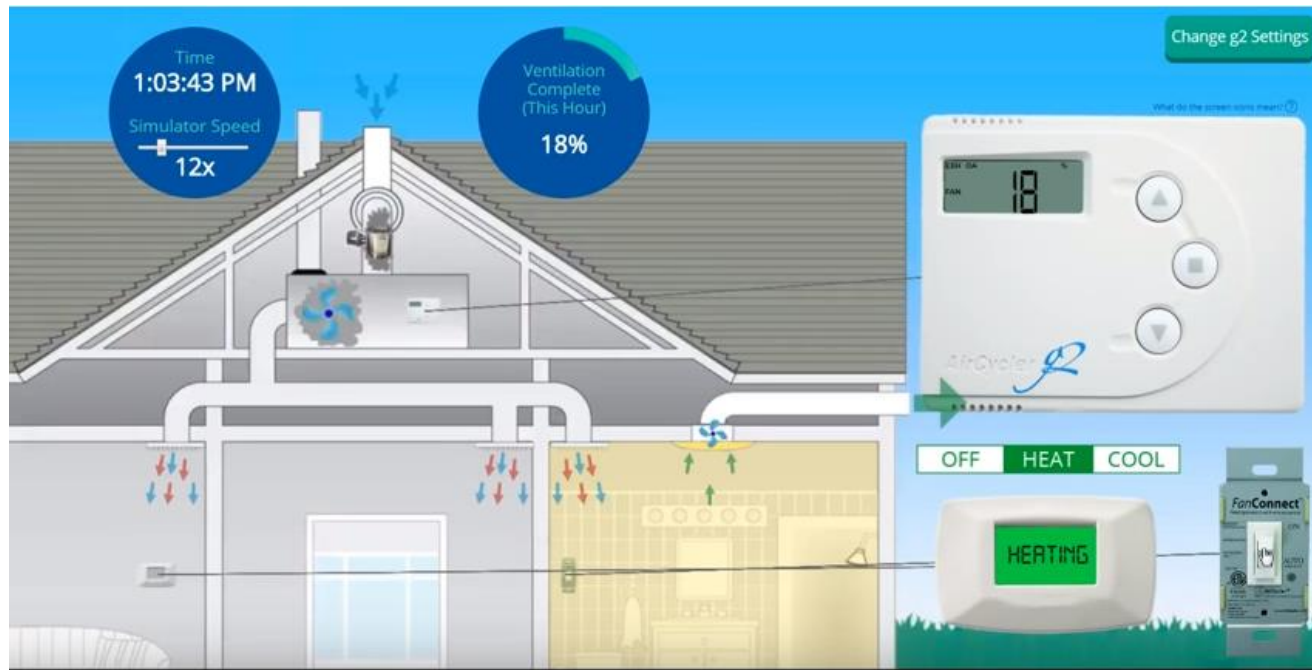
- Wall Framing Factor



	No. of Plates	Framing Factor*	Default
Walls (std):			
8 ft high, @16" o.c.	3	23%	X
8 ft high, @24" o.c.	3	20%	X
10 ft high, @16" o.c.	3	22%	
10 ft high, @24" o.c.	3	19%	
Walls (advanced):			
8 ft high, @16" o.c.	2	19%	
8 ft high, @24" o.c.	2	16%	
10 ft high, @16" o.c.	2	18%	
10 ft high, @24" o.c.	2	15%	
Floors (std):			
@16" o.c.	2	13%	X
@24" o.c.	2	10%	X
Floors (advanced):			
@16" o.c.	1	11%	
@24" o.c.	1	8%	
Ceilings (standard trusses**):			
@16" o.c.	0	14%	X
@24" o.c.	0	11%	X
Ceilings (advanced trusses – "raised heel"):			
@16" o.c.	0	10%	
@24" o.c.	0	7%	
Ceilings (conventional framing ***):			
@16" o.c.	2	13%	
@24" o.c.	2	9%	

Interpretation/Clarification Needs

- Hybrid Ventilation Systems



Interpretation/Clarification Needs

- Window Overhangs

Overhang

Enter the correct dimensions for the window overhangs. The win

Depth (ft):

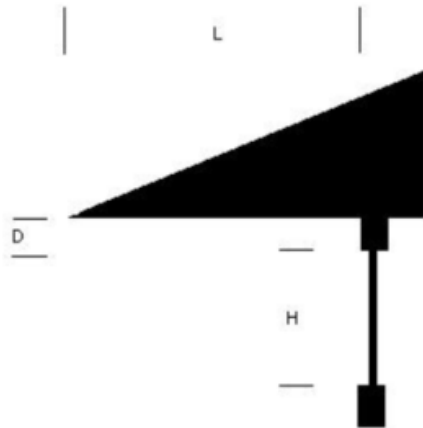
The overhang depth is the horizontal distance (in feet) from th

To Top of Window (ft):

This is the vertical distance (in feet) from the bottom of the ov

To Bottom of Window (ft):

This is the vertical distance (in feet) from the bottom of the ov



Setting the Standards for
Home Energy Efficiency

QA Genie 2018 and Beyond



- Support RESNET Enhanced QA Efforts
- 25% Online/Remote
- 25% In Field



Setting the Standards for
Home Energy Efficiency

QA Genie 2018 and Beyond

- Validate QA Genie Flags

Flags	
Outlier:	5,359 (5.68 per rating)
Red:	1,463 (1.55 per rating)
Most Common Flags	
No Window Overhang(s) (99.68%)	
Rater Location (96.93%)	
Ratings in One Day (95.02%)	
Duct LTO Testing Repeat Values (81.25%) 	
Blower Door Testing Repeat Values (72.88%) 	
Mechanical Equipment Set to Default EAE (71.19%)	
Ratio of Slab and Framed Floor Areas to Roof Area (64.30%)	
Conditioned Square Footage-to-Framed Floor and Slab Ratio (30.40%)	
Average Wall Height (28.07%)	
Electric rate (26.27%)	



QA Genie 2018 and Beyond

- Adjustments to Flags/Functionality
 - Window SHGC
 - Washing Machine EF
 - Ratings in One Day
 - Improve Interface/Search Filters



QA Genie 2018 and Beyond

- Continue Sharing Lessons
- QA Webinar Series



Setting the Standards for
Home Energy Efficiency

Questions?

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Setting the Standards for
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