



REScheck Software Version 4.6.4 Compliance Certificate

Project Village Nest Quartz Unit 13

Energy Code: **2015 IECC**
 Location: **Huntsville, Utah** (Nearest location to Eden, Utah)
 Construction Type: **Single-family**
 Project Type: **New Construction**
 Orientation: **Bldg. faces 270 deg. from North** (Entrance faces west)
 Conditioned Floor Area: **1,152 ft²**
 Glazing Area **19%**
 Climate Zone: **5 (8065 HDD)**
 Permit Date:
 Permit Number:

Construction Site:
 Northeast Quarter -Sector 8
 Township 7 North, Range 2 East
 Salt Lake base and Meridian, UT

Owner/Agent:
 John Umbanhowar
 HughesUmbanhowar Architects
 1322 Pacific Avenue
 Venice, CA 90291h
 3102995757
 mail@hummm.com

Designer/Contractor:
 John Umbanhowar
 hughesumbanhowar Architects
 1322 Pacific Avenue
 Venice, CA 90291
 3102995757
 main@hummm.com

Compliance: Passes using UA trade-off

Compliance: **4.0% Better Than Code** Maximum UA: **321** Your UA: **308**

The % Better or Worse Than Code Index reflects how close to compliance the house is based on code trade-off rules. It DOES NOT provide an estimate of energy use or cost relative to a minimum-code home.

Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	U-Factor	UA
Exterior Wall East: Structural Insulated Panels Orientation: Back	508		28.0	0.039	10
Window East: Wood Frame:Triple Pane with Low-E Orientation: Back	252			0.300	76
Exterior Wall South: Structural Insulated Panels Orientation: Left side	462		28.0	0.039	17
Window (2 combined surfaces): Wood Frame:Triple Pane with Low-E Orientation: Left side	28			0.300	8
Exterior Wall West: Structural Insulated Panels Orientation: Front	416		28.0	0.039	15
Door: Solid Orientation: Front	21			0.500	11
Window: Wood Frame:Triple Pane with Low-E Orientation: Front	18			0.300	5
Exterior Wall North: Structural Insulated Panels Orientation: Right side	462		28.0	0.039	16
Window (3 combined surfaces): Wood Frame:Triple Pane with Low-E Orientation: Right side	52			0.300	16

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	U-Factor	UA
Basement Wall West: Solid Concrete or Masonry Orientation: Front Wall height: 6.5' Depth below grade: 6.5' Insulation depth: 6.5'	156	0.0	12.0	0.052	8
Basement Wall East: Solid Concrete or Masonry Orientation: Back Wall height: 2.4' Depth below grade: 2.4' Insulation depth: 2.4'	64	0.0	12.0	0.063	4
Basement Wall North: Solid Concrete or Masonry Orientation: Left side Wall height: 4.5' Depth below grade: 4.5' Insulation depth: 4.5'	110	0.0	12.0	0.057	6
Basement Wall South: Solid Concrete or Masonry Orientation: Right side Wall height: 4.5' Depth below grade: 4.5' Insulation depth: 4.5'	110	0.0	12.0	0.057	6
Roof (4 combined surfaces): Cathedral Ceiling	576	44.0	16.0	0.017	10
Floor 1: Slab-On-Grade:Unheated Insulation depth: 0.0'	96		16.0	1.042	100

Compliance Statement: The proposed building design described here is consistent with the building plans, specifications, and other calculations submitted with the permit application. The proposed building has been designed to meet the 2015 IECC requirements in REScheck Version 4.6.4 and to comply with the mandatory rec check Inspection Checklist.

Dan Johnson - Energy Consultant



7/10/17

Name - Title

Signature

Date



Inspection Checklist

Energy Code: 2015 IECC

Requirements: 100.0% were addressed directly in the REScheck software

Text in the "Comments/Assumptions" column is provided by the user in the REScheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Pre-Inspection/Plan Review	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
103.1, 103.2 [PR1] ¹	Construction drawings and documentation demonstrate energy code compliance for the building envelope. Thermal envelope represented on construction documents.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
103.1, 103.2, 403.7 [PR3] ¹	Construction drawings and documentation demonstrate energy code compliance for lighting and mechanical systems. Systems serving multiple dwelling units must demonstrate compliance with the IECC Commercial Provisions.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
302.1, 403.7 [PR2] ²	Heating and cooling equipment is sized per ACCA Manual S based on loads calculated per ACCA Manual J or other methods approved by the code official.	Heating: Btu/hr____ Cooling: Btu/hr____	Heating: Btu/hr____ Cooling: Btu/hr____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1 High Impact (Tier 1)	2 Medium Impact (Tier 2)	3 Low Impact (Tier 3)
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Section # & Req.ID	Foundation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
402.1.2 [FO1] ¹	Slab edge insulation R-value.	R-____ <input type="checkbox"/> Unheated <input type="checkbox"/> Heated	R-____ <input type="checkbox"/> Unheated <input type="checkbox"/> Heated	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
402.1.2 [FO3] ¹	Slab edge insulation depth/length.	____ ft	____ ft	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
402.1.1 [FO4] ¹	Conditioned basement wall insulation R-value. Where interior insulation is used, verification may need to occur during Insulation Inspection. Not required in warm-humid locations in Climate Zone 3.	R-____ R-____	R-____ R-____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
303.2 [FO5] ¹	Conditioned basement wall insulation installed per manufacturer's instructions.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
402.2.9 [FO6] ¹	Conditioned basement wall insulation depth of burial or distance from top of wall.	____ ft	____ ft	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
303.2.1 [FO11] ²	A protective covering is installed to protect exposed exterior insulation and extends a minimum of 6 in. below grade.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
403.9 [FO12] ²	Snow- and ice-melting system controls installed.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)
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Section # & Req.ID	Framing / Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
402.1.1, 402.3.4 [FR1] ¹	Door U-factor.	U-____	U-____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
402.1.1, 402.3.1, 402.3.3, 402.3.6, 402.5 [FR2] ¹	Glazing U-factor (area-weighted average).	U-____	U-____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
303.1.3 [FR4] ¹	U-factors of fenestration products are determined in accordance with the NFRC test procedure or taken from the default table.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
402.4.1.1 [FR23] ¹	Air barrier and thermal barrier installed per manufacturer's instructions.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
402.4.3 [FR20] ¹	Fenestration that is not site built is listed and labeled as meeting AAMA /WDMA/CSA 101/I.S.2/A440 or has infiltration rates per NFRC 400 that do not exceed code limits.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
402.4.5 [FR16] ²	IC-rated recessed lighting fixtures sealed at housing/interior finish and labeled to indicate ≤2.0 cfm leakage at 75 Pa.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
403.2.1 [FR12] ¹	Supply and return ducts in attics insulated ≥ R-8 where duct is ≥ 3 inches in diameter and ≥ R-6 where < 3 inches. Supply and return ducts in other portions of the building insulated ≥ R-6 for diameter ≥ 3 inches and R-4.2 for < 3 inches in diameter.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Ducts located completely inside the building envelope.
403.3.3.5 [FR15] ³	Building cavities are not used as ducts or plenums.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
403.4 [FR17] ²	HVAC piping conveying fluids above 105 °F or chilled fluids below 55 °F are insulated to ≥R-3.	R-____	R-____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
403.4.1 [FR24] ¹	Protection of insulation on HVAC piping.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
403.5.3 [FR18] ²	Hot water pipes are insulated to ≥R-3.	R-____	R-____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
403.6 [FR19] ²	Automatic or gravity dampers are installed on all outdoor air intakes and exhausts.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)
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Section # & Req.ID	Insulation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
303.1 [IN13] ²	All installed insulation is labeled or the installed R-values provided.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
402.1.1, 402.2.5, 402.2.6 [IN3] ¹	Wall insulation R-value. If this is a mass wall with at least ½ of the wall insulation on the wall exterior, the exterior insulation requirement applies (FR10).	R-_____ <input type="checkbox"/> Wood <input type="checkbox"/> Mass <input type="checkbox"/> Steel	R-_____ <input type="checkbox"/> Wood <input type="checkbox"/> Mass <input type="checkbox"/> Steel	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
303.2 [IN4] ¹	Wall insulation is installed per manufacturer's instructions.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)
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Section # & Req.ID	Final Inspection Provisions	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
402.1.1, 402.2.1, 402.2.2, 402.2.6 [FI1] ¹	Ceiling insulation R-value.	R-____ <input type="checkbox"/> Wood <input type="checkbox"/> Steel	R-____ <input type="checkbox"/> Wood <input type="checkbox"/> Steel	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
303.1.1.1, 303.2 [FI2] ¹	Ceiling insulation installed per manufacturer's instructions. Blown insulation marked every 300 ft ² .			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
402.2.3 [FI22] ²	Vented attics with air permeable insulation include baffle adjacent to soffit and eave vents that extends over insulation.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement is not applicable.
402.2.4 [FI3] ¹	Attic access hatch and door insulation ≥R-value of the adjacent assembly.	R-____	R-____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
402.4.1.2 [FI17] ¹	Blower door test @ 50 Pa. ≤=5 ach in Climate Zones 1-2, and ≤=3 ach in Climate Zones 3-8.	ACH 50 = ____	ACH 50 = ____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
403.2.3 [FI4] ¹	Duct tightness test result of ≤=4 cfm/100 ft ² across the system or ≤=3 cfm/100 ft ² without air handler @ 25 Pa. For rough-in tests, verification may need to occur during Framing Inspection.	____ cfm/100 ft ²	____ cfm/100 ft ²	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: All ducts and air handlers are located within conditioned space.
403.3.2 [FI27] ¹	Ducts are pressure tested to determine air leakage with either: Rough-in test: Total leakage measured with a pressure differential of 0.1 inch w.g. across the system including the manufacturer's air handler enclosure if installed at time of test. Postconstruction test: Total leakage measured with a pressure differential of 0.1 inch w.g. across the entire system including the manufacturer's air handler enclosure.	____ cfm/100 ft ²	____ cfm/100 ft ²	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: All ducts and air handlers are located within conditioned space.
403.3.2.1 [FI24] ¹	Air handler leakage designated by manufacturer at ≤=2% of design air flow.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement is not applicable.
403.1.1 [FI9] ²	Programmable thermostats installed for control of primary heating and cooling systems and initially set by manufacturer to code specifications.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement is not applicable.
403.1.2 [FI10] ²	Heat pump thermostat installed on heat pumps.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
403.5.1 [FI11] ²	Circulating service hot water systems have automatic or accessible manual controls.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement is not applicable.

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Final Inspection Provisions	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
403.6.1 [FI25] ²	All mechanical ventilation system fans not part of tested and listed HVAC equipment meet efficacy and air flow limits.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
403.2 [FI26] ²	Hot water boilers supplying heat through one- or two-pipe heating systems have outdoor setback control to lower boiler water temperature based on outdoor temperature.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement is not applicable.
403.5.1.1 [FI28] ²	Heated water circulation systems have a circulation pump. The system return pipe is a dedicated return pipe or a cold water supply pipe. Gravity and thermos-syphon circulation systems are not present. Controls for circulating hot water system pumps start the pump with signal for hot water demand within the occupancy. Controls automatically turn off the pump when water is in circulation loop is at set-point temperature and no demand for hot water exists.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement is not applicable.
403.5.1.2 [FI29] ²	Electric heat trace systems comply with IEEE 515.1 or UL 515. Controls automatically adjust the energy input to the heat tracing to maintain the desired water temperature in the piping.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement is not applicable.
403.5.2 [FI30] ²	Water distribution systems that have recirculation pumps that pump water from a heated water supply pipe back to the heated water source through a cold water supply pipe have a demand recirculation water system. Pumps have controls that manage operation of the pump and limit the temperature of the water entering the cold water piping to 104°F.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement is not applicable.
403.5.4 [FI31] ²	Drain water heat recovery units tested in accordance with CSA B55.1. Potable water-side pressure loss of drain water heat recovery units < 3 psi for individual units connected to one or two showers. Potable water-side pressure loss of drain water heat recovery units < 2 psi for individual units connected to three or more showers.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement is not applicable.
404.1 [FI6] ¹	75% of lamps in permanent fixtures or 75% of permanent fixtures have high efficacy lamps. Does not apply to low-voltage lighting.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
404.1.1 [FI23] ³	Fuel gas lighting systems have no continuous pilot light.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement is not applicable.

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Final Inspection Provisions	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
401.3 [F17] ²	Compliance certificate posted.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
303.3 [F118] ³	Manufacturer manuals for mechanical and water heating systems have been provided.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)
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2015 IECC Energy Efficiency Certificate

Insulation Rating	R-Value
Above-Grade Wall	28.00
Below-Grade Wall	12.00
Floor	16.00
Ceiling / Roof	60.00
Ductwork (unconditioned spaces):	<u>N/A</u>

Glass & Door Rating	U-Factor	SHGC
Window	0.30	
Door	0.50	

Heating & Cooling Equipment	Efficiency
Heating System: <u>Hydronic radiant floors</u>	<u>TBD</u>
Cooling System: <u>N/A</u>	<u> </u>
Water Heater: <u>Electric</u>	<u>TBD</u>

Name: Dan Johnson - Energy Consultant Date: 7/10/17

Comments