

Project Cannery Trail Residences

Energy Code: 2015 IECC

Location: Eau Claire, Wisconsin

Construction Type: Multi-family
Project Type: New Construction

Conditioned Floor Area: 90,026 ft2

Glazing Area 27%

Climate Zone: 6 (8330 HDD)

Permit Date: Permit Number:

Construction Site: Owner/Agent: 1750 N Oxford Ave W Capital Group Eau Claire, Wisconsin 54703 608-345-9848

tyler@wcapitalgroupre.com

Designer/Contractor: Ryan Schultz OpeningDesign

316W Washington Ave, Suite 675 Madison, Wisconsin 53703 ryan@openingdesign.com

Compliance: Passes using UA trade-off

Compliance: **0.1% Better Than Code** Maximum UA: **4234** Your UA: **4231**

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
WOOD-FRAMED ROOF ABOVE 3RD FLOOR: Flat Ceiling or Scissor Truss	20,572	50.0	25.0	0.016	329
WOOD-FRAMED ROOF ABOVE CORRIDORS (USG - L521): Flat Ceiling or Scissor Truss	2,021	0.0	25.0	0.037	75
Courtyard Ceiling: Other	8,108			0.030	243
COMPOSITE SIDING/DECKING WALL: Wood Frame, 16" o.c.	4,226	24.0	3.6	0.043	85
1ST FLOOR DOORS - GLASS INSET - Product ID AND-N-65-00673-00001, SHGC 0.23: Glass Door (over 50% glazing)	66			0.290	19
1ST FLOOR DOORS - TERRACE DOORS - Product ID AND-N-65-00673-00001, SHGC 0.23: Glass Door (over 50% glazing)	407			0.290	118
1ST FLOOR WINDOWS - Product ID AND-N-24-02067-00001, SHGC 0.31: Vinyl Frame	1,437			0.300	431
STOREFRONT WINDOW: Metal Frame	341			0.550	188
2ND FLOOR HVAC PANELS: Wood Frame, 16" o.c.	17	0.0	0.0	0.238	4
EXT WALL - FIBER CEMENT - SMALL: Wood Frame, 16" o.c.	5,967	24.0	3.6	0.043	170
3RD FLOOR DOORS - TERRACE DOORS - Product ID AND-N-65-00673-00001, SHGC 0.23: Glass Door (over 50% glazing)	299			0.290	87
3RD FLOOR WINDOWS - Product ID AND-N-24-02067-00001, SHGC 0.31: Vinyl Frame	1,725			0.300	518
EXT WALL - FIBER CEMENT - SMALL: Wood Frame, 16" o.c.	475	24.0	3.6	0.043	20
3RD FLOOR HVAC PANELS: Wood Frame, 16" o.c.	17	0.0	0.0	0.238	4

Project Title: Cannery Trail Residences Report date: 10/22/19

Data filename: Page 1 of 10

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	U-Factor	UA
EXT WALL - FIBER CEMENT - LARGE: Wood Frame, 16" o.c.	824	24.0	3.6	0.043	35
EXT WALL - FIBER CEMENT - LARGE: Wood Frame, 16" o.c.	10,019	24.0	3.6	0.043	334
2ND FLOOR DOORS - TERRACE DOORS - Product ID AND-N-65-00673-00001, SHGC 0.23: Glass Door (over 50% glazing)	274			0.290	79
2ND FLOOR WINDOWS - Product ID AND-N-24-02067-00001, SHGC 0.31: Vinyl Frame	1,971			0.300	591
COMPOSITE SIDING/DECKING WALL - COURTYARD: Wood Frame, 16" o.c.	247	24.0	12.6	0.030	7
COMPOSITE SIDING/DECKING WALL: Wood Frame, 16" o.c.	892	24.0	3.6	0.043	38
CMU + CLADDING COMPOSITE SIDING/DECKING WALL: Masonry Block w/ Empty Cells	684	15.0	0.0	0.076	52
POLYCARBONATE WALL - 2ND: Other	117			0.188	22
POLYCARBONATE WALL - 3RD: Other	1,120			0.188	211
COMPOSITE CEILING OVER EXTERIOR: All-Wood Joist/Truss	1,979	30.0	3.6	0.029	57
EXT WALL - C8AØF - (10" CONCRETE + 2" EPS INSUL): Solid Concrete or Masonry Wall height: 10.1' Depth below grade: 4.1' Insulation depth: 10.1'	6,642	0.0	15.0	0.056	365
GARAGE DOOR: Insulated Metal, non-swinging: Glass Door (over 50% glazing)	128			0.350	45
EXT WALL - C8AØF - WITH STUCCO: Solid Concrete or Masonry Wall height: 10.1' Depth below grade: 4.1' Insulation depth: 10.1'	995	0.0	15.0	0.056	56
EXT WALL - M8AØF - (10" CMU + 2" EPS INSUL): Solid Concrete or Masonry Wall height: 10.1' Depth below grade: 4.1' Insulation depth: 10.1'	852	0.0	15.0	0.056	48

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: REScheck-Web and to comply with the mandatory requirements listed in the REScheck Inspection Checklist.

Ryan Schultz - Architect

Signature 10.22.2019

Page 2 of 10

Name - Title

Project Notes:

The basement is a conditioned garage. Building area calculation: Conditioned space: 1rst floor = 19292sqft + 2nd and 3rd floors = 38968 sqft + corridors = 3597 sqft, total = 61857 sqft. conditioned basement = 28169 sqft. Total conditioned = 90026 sqft -- Courtyard ceiling R-value calculation: 61/2" average thickness or Polylso panels of R7 per inch of thickness (https://inspectapedia.com/insulation/Insulation-Values-Table.php) = R45 -- Uninsulated area of HVAC panels calculation: Panel area: 31.7sqf uninsulated opening area: 8.4sqf uninsulated area per panel = 8.4/31.7 = 0.264 = 26.4%. On 2nd and 3rd floors, 660 sqf of panels x 26.4% = 17 sqf

Project Title: Cannery Trail Residences Report date: 10/22/19

W

REScheck Software Version: REScheck-Web

Inspection Checklist

Energy Code: 2015 IECC

Requirements: 42.0% 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.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met. Location on plans/spec: Wall sections A400 -> A405
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.			□Complies □Does Not □Not Observable □Not Applicable	
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	□Complies □Does Not □Not Observable □Not Applicable	

Additional Comments/Assumptions:

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

Project Title: Cannery Trail Residences Data filename:

Report date: 10/22/19

Page 3 of 10

Section # & Req.ID	Foundation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
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	□Complies □Does Not □Not Observable □Not Applicable	See the Envelope Assemblies table for values.
303.2 [FO5] ¹	Conditioned basement wall insulation installed per manufacturer's instructions.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met. Location on plans/spec: Wall sections A400 -> A405
402.2.9 [FO6] ¹	Conditioned basement wall insulation depth of burial or distance from top of wall.	ft	ft	□Complies □Does Not □Not Observable □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.			□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met. Location on plans/spec: Wall sections A400 -> A405
403.9 [FO12] ²	Snow- and ice-melting system controls installed.			□Complies □Does Not □Not Observable □Not Applicable	

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

Project Title: Cannery Trail Residences Data filename:

Section #	Framing / Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
& Req.ID 402.1.1,	Glazing U-factor (area-weighted	Value U	U	□Complies	See the Envelope Assemblies
402.3.1, 402.3.3.	average).	<u> </u>		□Does Not	table for values.
402.5			i 	□Not Observable □Not Applicable	
[FR2] ¹			 		
303.1.3 [FR4] ¹	U-factors of fenestration products are determined in accordance			☐Complies ☐Does Not	Requirement will be met.
(i K4)	with the NFRC test procedure or			□Not Observable	Location on plans/spec:
	taken from the default table.			☐Not Applicable	for each window and door
					type, when not using RESCheck default
402.1.1 [FR10] ¹	Mass wall exterior insulation R-value. If more than ½ of the	R	R	□Complies □Does Not	See the Envelope Assemblies table for values.
②	insulation is on the wall interior, the interior insulation		i ! !	□Not Observable	i
	requirement applies and		1 1 1 1	□Not Applicable	1 1 1 1
	verification may need to occur during Insulation Inspection.		 		
303.2 [FR11] ¹	Mass wall exterior insulation installed per manufacturer's			□Complies □Does Not	Requirement will be met.
②	instructions.			□Not Observable	Location on plans/spec: Wall sections A400 -> A405
402 4 1 1	Air be and a read the surrel be and a			□Not Applicable	
402.4.1.1 [FR23] ¹	Air barrier and thermal barrier installed per manufacturer's			☐Complies ☐Does Not	Requirement will be met.
(2)	instructions.			□Not Observable	1 1 1 1
402.4.3	Fenestration that is not site built			□Not Applicable □Complies	Requirement will be met.
[FR20] ¹	is listed and labeled as meeting AAMA /WDMA/CSA 101/I.S.2/A440			□Does Not	
(2)	or has infiltration rates per NFRC			□Not Observable □Not Applicable	i
	400 that do not exceed code limits.			шиос Аррисавіс	
402.4.5 [FR16] ²	IC-rated recessed lighting fixtures sealed at housing/interior finish			☐Complies ☐Does Not	Requirement will be met.
	and labeled to indicate ≤2.0 cfm leakage at 75 Pa.			□Not Observable	
403.3.1	Supply and return ducts in attics			□Not Applicable □Complies	
403.3.1 [FR12] ¹	insulated >= R-8 where duct is			Does Not	
②	>= 3 inches in diameter and >= R-6 where < 3 inches. Supply and			□Not Observable □Not Applicable	
	return ducts in other portions of the building insulated >= R-6 for			<u> </u>	
	diameter >= 3 inches and R-4.2 for < 3 inches in diameter.				
403.3.5 [FR15] ³	Building cavities are not used as ducts or plenums.			□Complies	
(f)	ducts of piciluins.			□Does Not □Not Observable	
				☐Not Applicable	;
403.4 [FR17] ²	HVAC piping conveying fluids above 105 °F or chilled fluids	R	R	□Complies □Does Not	1 1 1 1
•	below 55 ${}^{\Omega}$ F are insulated to \geq R-3.		: 	□Not Observable	,
403.4.1	Protection of insulation on HVAC		 	□Not Applicable □Complies	1 1 1
[FR24] ¹	piping.			□Does Not	
•				□Not Observable □Not Applicable	;
	i		i	minor Applicable	i

2 Medium Impact (Tier 2)

Project Title: Cannery Trail Residences Data filename:

1 High Impact (Tier 1)

Report date: 10/22/19

3 Low Impact (Tier 3)

Section # & Req.ID	Framing / Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
403.5.3 [FR18] ²	Hot water pipes are insulated to ≥R-3.	R	R	□Complies □Does Not	
•			 	□Not Observable □Not Applicable	
403.6 [FR19] ²	Automatic or gravity dampers are installed on all outdoor air			□Complies □Does Not	Requirement will be met.
	intakes and exhausts.			□Not Observable □Not Applicable	

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

Project Title: Cannery Trail Residences Data filename:

Report date: 10/22/19

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.			□Complies □Does Not	Requirement will be met.
•	provided.			□Not Observable □Not Applicable	
402.1.1, 402.2.6	Floor insulation R-value.	R	R Wood	\square Complies \square Does Not	See the Envelope Assemblies table for values.
[IN1] ¹		☐ Steel	Steel	□Not Observable □Not Applicable	
303.2, 402.2.7 [IN2] ¹	Floor insulation installed per manufacturer's instructions and in substantial contact with the underside of the subfloor, or floor framing cavity insulation is in contact with the top side of sheathing, or continuous insulation is installed on the underside of floor framing and extends from the bottom to the top of all perimeter floor framing members.			□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met. Location on plans/spec: Wall sections A400 -> A405 and Building sections A300 - > A302
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 Wood Mass Steel	R	□Complies □Does Not □Not Observable □Not Applicable	See the Envelope Assemblies table for values.
303.2 [IN4] ¹	Wall insulation is installed per manufacturer's instructions.			☐Complies ☐Does Not	Requirement will be met.
				□Not Observable □Not Applicable	Location on plans/spec: Wall sections A400 -> A405

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
402.1.1, 402.2.1, 402.2.2, 402.2.6 [FI1] ¹	Ceiling insulation R-value.	R	R Wood Steel	□Complies □Does Not □Not Observable □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 .			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met. Location on plans/spec: Wall sections A400 -> A405 and Building sections A300 - > A302
402.2.3 [FI22] ²	Vented attics with air permeable insulation include baffle adjacent to soffit and eave vents that extends over insulation.			□Complies □Does Not □Not Observable □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	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met. Location on plans/spec: Building sections A300 -> A302
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 =	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
403.3.4 [FI4] ¹	Duct tightness test result of <=4 cfm/100 ft2 across the system or <=3 cfm/100 ft2 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	□Complies □Does Not □Not Observable □Not Applicable	
403.3.3 [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.	ft ² cfm/100	ft ² cfm/100	□Complies □Does Not □Not Observable □Not Applicable	
403.3.2.1 [FI24] ¹	Air handler leakage designated by manufacturer at <=2% of design air flow.			☐Complies ☐Does Not ☐Not Observable ☐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.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.1.2 [FI10] ²	Heat pump thermostat installed on heat pumps.			□Complies □Does Not □Not Observable □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
403.5.1 [FI11] ²	Circulating service hot water systems have automatic or accessible manual controls.			□Complies □Does Not □Not Observable □Not Applicable	
403.6.1 [FI25] ²	All mechanical ventilation system fans not part of tested and listed HVAC equipment meet efficacy and air flow limits.			□Complies □Does Not □Not Observable □Not Applicable	
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.			□Complies □Does Not □Not Observable □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 thermossyphon 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.			□Complies □Does Not □Not Observable □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.			□Complies □Does Not □Not Observable □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.			□Complies □Does Not □Not Observable □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.			□Complies □Does Not □Not Observable □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.			□Complies □Does Not □Not Observable □Not Applicable	
	1 High Impact (Tier	1) 2 Medium	Impact (Tier 2)	3 Low Impact (Ti	er 3)

Project Title: Cannery Trail Residences Data filename:

Section # & Req.ID	Final Inspection Provisions	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
404.1.1 [FI23] ³	Fuel gas lighting systems have no continuous pilot light.			□Complies □Does Not	
•				□Not Observable □Not Applicable	
401.3 [FI7] ²	Compliance certificate posted.			□Complies □Does Not	Requirement will be met.
				□Not Observable □Not Applicable	1
303.3 [FI18] ³	Manufacturer manuals for mechanical and water heating systems have been provided.			□Complies □Does Not	
				□Not Observable □Not Applicable	