CERTIFICATE OF COMPLIANCE - LOWRISE MULTIFAMILY MIXED USE PERFORMANCE COMPLIANCE METHOD				LMCC-PRF-01-E
Lowrise Multifamily Mixed Use Performance Compliance Method				(Page 1 of 28)
Project Name:	Multifamily Example	Date Prepared:	2023-08-11	

A. General Information					
1	Project Name	Multifamily Example			
2	Run Title	Title 24 Analysis			
3	Project Location	7188 Pleasant Way			
4	City	Rocklin	5	Standards Version	Compliance 2022
6	Zip code	95650	7	Compliance Software (version)	EnergyPro 9.1
8	Climate Zone	11	9	Building Orientation (deg)	0
10	Building Type(s)	• Multifamily 3 stories	11	Weather File	AUBURN_STYP20.epw
12	Project Scope	• New complete scope	13	Number of Dwelling Units	15
14	Total Conditioned Floor Area in Scope (ft^2)	10150	15	Total # of hotel/motel rooms	0
16	Total Unconditioned Floor Area (ft^2)	1200	17	Fuel Type	Natural gas
18	Nonresidential Conditioned Floor Area	1280	19	Total # of Stories (Habitable Above Grade)	2
20	Residential Conditioned Floor Area	8870			

B. PROJECT SUMMARY

Table B shows which building components are included in the performance calculation. If indicated as not included, the project must show compliance prescriptively if within the permit application.

Building Components Complying via Performance						Building Components Complying Prescriptively	
Envelope (See Table G)	Nonres	Performance	Solar Thermal Water Heating (See Table I3)	☐	Performance	The following building components are ONLY eligible for prescriptive compliance and should be documented on the LMCC form listed if within the scope of the permit application (i.e. compliance will not be shown on the LMCC-PRF-E).	
	MultiFam	Performance		☒	Not Included		
Mechanical (See Table H)	Nonres	Performance	Covered Process: Commercial Kitchens (see Table J)	☐	Performance	Indoor Lighting (Unconditioned) 140.6 & 170.2(e)	LMCC-LTI-01E is required
	MultiFam	Performance		☒	Not Included	Outdoor Lighting 140.7 & 170.2(e)	LMCC-LTO-01E is required
Domestic Hot Water (See Table I)	Nonres	Performance	Covered Process: Laboratory Exhaust (see Table J)	☐	Performance	Sign Lighting 140.8 & 170.2(e)	LMCC-LTS-01E is required
	MultiFam	Performance		☒	Not Included	**Building Components Complying with Mandatory Measures**	
Lighting (Indoor Conditioned, see Table K)	Nonres	Performance	Photovoltaics (see Table F)	☒	Performance	Electrical power systems, commissioning, solar ready, elevator and escalator requirements are mandatory and should be documented on the LMCC form listed if applicable (i.e. compliance will not be shown on the LMCC-PRF-E.)	
	MultiFam	Performance		☐	Not Included	Electrical Power Distribution 110.11	LMCC-ELC-01E is required
			Battery (see Table F)	☐	Performance	Commissioning 120.8	LMCC-CXR-01E is required
				☒	Not Included	Solar and Battery 110.10	LMCC-SAB-01E is required

C1. COMPLIANCE SUMMARY

COMPLIES[3]

	Time Dependent Valuation (TDV)		Source Energy Use
	Efficiency[1] (kBtu/ft² - yr)	**Total[2] (kBtu/ft² - yr)**	**Total[2] (kBtu/ft² - yr)**
Standard Design	136.09	50.56	8.5
Proposed Design	114	18.29	8.5
Compliance Margins	**22.09**	**32.27**	**1.94**
	Pass	**Pass**	**Pass**

[1] Efficiency measures include improvements like a better building envelope and more efficient equipment

[2] Compliance Totals include efficiency, photovoltaics and batteries

[3] New Construction, Complete Addition Scope: Building complies when all efficiency and total compliance margins are greater than or equal to zero and unmet load hour limits are not exceeded
Existing, Addition and Alteration Scope: Building complies when efficiency compliance margin is greater than or equal to zero and unmet load hour limits are not exceeded

C2. TDV ENERGY COMPLIANCE RESULTS FOR PERFORMANCE COMPONENTS (Annual TDV Energy Use, kBtu/ft^2 - yr)

COMPLIES[2]

Energy Component	Standard Design (TDV)	Proposed Design (TDV)	Compliance Margin (TDV)[1]
Space Heating	5.46	11.69	-6.23
Space Cooling	27.93	26.61	1.32
Indoor Fans	26.73	18.41	8.32
Heat Rejection	0	0	0
Pumps & Misc.	0.38	0.47	-0.09
Domestic Hot Water	55.38	43.23	12.15
Indoor Lighting	20.21	13.59	6.62
Flexibility	---	---	---
EFFICIENCY COMPLIANCE TOTAL	**136.09**	**114**	**22.09 (16.2%)**
Photovoltaics	-85.53	-95.71	10.18
Batteries	---	---	---
TOTAL COMPLIANCE	**50.56**	**18.29**	**32.27 (63.8%)**

[1] *Notes: This number in parenthesis following the Compliance Margin in column 4, represents the Percent Better than Standard.*

C3. TDV ENERGY RESULTS FOR NON-REGULATED COMPONENTS[1]

Non-Regulated Energy Component	Standard Design (TDV)	Proposed Design (TDV)	Compliance Margin (TDV)[1]
Receptacle	58.7	58.7	---
Process	58	57.59	0.41
Other Ltg	8.84	8.84	---
Process Motors	7.34	7.34	---
TOTAL (TOTAL COMPLIANCE + NON-REGULATED COMPONENTS)	**183.44**	**150.76**	**32.68 (17.8%)**

[1] *Notes: This table is not used for Energy Code Compliance.*

C4. SOURCE ENERGY COMPLIANCE RESULTS FOR PERFORMANCE COMPONENTS (Annual SOURCE Energy Use, kBtu/ft^2 /yr)

COMPLIES[2]

Energy Component	Standard Design (SOURCE)	Proposed Design (SOURCE)	Compliance Margin (SOURCE)[1]
Space Heating	0.7	1.47	-0.77
Space Cooling	1.28	1.16	0.12
Indoor Fans	2.21	1.45	0.76
Heat Rejection	0	0	0
Pumps & Misc.	0.04	0.06	-0.02
Domestic Hot Water	5.1	4.03	1.07
Indoor Lighting	1.68	1.16	0.52
Flexibility	---	---	---
EFFICIENCY COMPLIANCE TOTAL	**11.01**	**9.33**	**1.68 (15.3%)**
Photovoltaics	-2.51	-2.77	0.26
Batteries	---	---	---
TOTAL COMPLIANCE	**8.5**	**6.56**	**1.94 (22.8%)**

[1] *Notes: This number in parenthesis following the Compliance Margin in column 4, represents the Percent Better than Standard.*

C5. SOURCE ENERGY RESULTS FOR NON-REGULATED COMPONENTS[1]

Non-Regulated Energy Component	Standard Design (SOURCE)	Proposed Design (SOURCE)	Compliance Margin (SOURCE)[1]
Receptacle	5.33	5.33	---
Process	4.75	4.71	0.04
Other Ltg	0.89	0.89	---
Process Motors	0.69	0.69	---
TOTAL (TOTAL COMPLIANCE + NON-REGULATED COMPONENTS)	**20.16**	**18.18**	**1.98 (9.8%)**

[1] *Notes: This table is not used for Energy Code Compliance.*

C6. 'ABOVE CODE' QUALIFICATIONS

☐ This project is pursuing CalGreen Tier 1 ☐ This project is pursuing CalGreen Tier 2

C7. ENERGY USE SUMMARY

Energy Component	Standard Design Site (MWh)	Proposed Design Site (MWh)	Margin (MWh)	Standard Design Site (MBtu)	Proposed Design Site (MBtu)	Margin (MBtu)
Space Heating	1.8	4.1	-2.3	---	---	---
Space Cooling	6.4	6.1	0.3	---	---	---
Indoor Fans	9.5	5.8	3.7	---	---	---
Heat Rejection	---	---	---	---	---	---
Pumps & Misc.	0.1	0.2	-0.1	---	---	---
Domestic Hot Water	21.4	16.5	4.9	---	---	---
Indoor Lighting	7.9	5.2	2.7	---	---	---
Flexibility	---	---	---	---	---	---
EFFICIENCY TOTAL	**47.1**	**37.9**	**9.2**	**0**	**0**	**0**
Photovoltaics	-44.2	-48.9	4.7	---	---	---
Batteries	---	---	---	---	---	---
ENERGY USE SUBTOTAL	**2.9**	**-11**	**13.9**	**0**	**0**	**0**
Receptacle	21.7	21.7	0	---	---	---
Process	21.7	21.5	0.2	---	---	---
Other Ltg	2.9	2.9	0	---	---	---
Process Motors	2.8	2.8	0	---	---	---
ENERGY USE TOTAL	**52**	**37.9**	**14.1**	**0**	**0**	**0**

C8. ENERGY USE INTENSITY (EUI)

	Standard Design (kBtu/ft^2 / yr)	Proposed Design (kBtu/ft^2 / yr)	Margin (kBtu/ft^2 / yr)	Margin Percentage
GROSS EUI[1]	28.92	26.09	2.83	9.79
NET EUI[1]	15.63	11.39	4.24	27.13

[1] *Notes: Gross EUI is Energy Use Total (not including PV)/Total Building Area. Net EUI is Energy Use Total (including PV)/Total Building Area.*

D1. EXCEPTIONAL CONDITIONS

- The project uses the Simplified Geometry Performance Modeling Approach which is not capable of modeling daylighting controls and assumes the prescriptive Secondary Daylit Control requirements are met. PRESCRIPTIVE COMPLIANCE documentation (form NRCC-LTI-02-E) for the requirements of section 140.6(d) Automatic Daylighting Controls in Secondary Daylit Zones is required.
- PV/Battery Building Type has been modified from software defaults for one or more spaces. Review project's PV/Battery Building Type(s) with documentation author. Refer to Energy Code section 140.10 for Nonresidential or 170.2(g) for more information.

D2. MULTIFAMILY REQUIRED SPECIAL FEATURES

- Indoor air quality, balanced fan
- IAQ Ventilation System: supply outside air inlet, filter, and H/ERV cores accessible per RACM Reference Manual
- Insulation below roof deck
- Non-standard duct location (any location other than attic)
- Central Heat Pump Water Heater
- Multifamily: Recirculating with no control (continuous pumping)

E1. HERS VERIFICATION SUMMARY

The following is a summary of the features that must be field-verified by a certified HERS Rater as a condition for meeting the modeled energy performance for this computer analysis. Additional detail is provided in the building tables below. Registered CF2Rs and CF3Rs are required to be completed in the HERS Registry.

Building-level Verifications:
- Quality insulation installation (QII)
- Indoor air quality ventilation
- Kitchen range hood

Cooling System Verifications:
- Minimum Airflow
- Verified Refrigerant Charge
- Fan Efficacy Watts/CFM

Heating System Verifications:
- Verified heat pump rated heating capacity

HVAC Distribution System Verifications:
- Duct leakage testing
- Ducts located entirely in conditioned space confirmed by duct leakage testing

Domestic Hot Water System Verifications:
- Multifamily: Drain water heat recovery system

F1. REQUIRED PV SYSTEMS

01	02	03	04	05	06	07	08	09	10	11	12
DC System Size (kWdc)	**Exception[1]**	**Module Type**	**Array Type**	**Power Electronics**	**CFI**	**Azimuth (deg)**	**Tilt Input**	**Array Angle (deg)**	**Tilt: (x in 12)**	**Inverter Eff. (%)**	**Annual Solar Access (%)**
30	n/a	Standard (14-17%)	Fixed	none	false	180	Degrees	22	4.85	96	100

[1]*See Table D1 for any PV exceptions used.*

F1B. PV BATTERY BUILDING TYPE(S)

01	02	03
Building Occupancy Type* (From Table 140.10-A/B and 170.2-U/V)	**Conditioned Floor Area (ft^2)**	**Unconditioned Floor Area (ft^2)**
Grocery	0	0
High-Rise Multifamily	0	0
Office, Financial Institutions, Unleased Tenant Space	70	0
Retail	1280	0
School	0	0
Warehouse	0	0
Auditorium, Convention Center, Hotel/Motel, Library, Medical Office Building/Clinic, Restaurant, Theater	0	0
None	800	1200

**Building Occupancy Types are defined in Section 100.1 of the Energy Code*

F3. DWELLING UNIT INFORMATION

01	02	03	04
Dwelling Unit Name	**Dwelling Unit Type**	**Zone**	**Zone Group Multiplier**
DDU-1 1 Bedroom-(1/5)	DU-1 1 Bedroom	S-1-1st Floor Apts	1
DDU-1 1 Bedroom-(2/5)	DU-1 1 Bedroom	S-1-1st Floor Apts	1
DDU-1 1 Bedroom-(3/5)	DU-1 1 Bedroom	S-1-1st Floor Apts	1
DDU-1 1 Bedroom-(4/5)	DU-1 1 Bedroom	S-1-1st Floor Apts	1
DDU-1 1 Bedroom-(5/5)	DU-1 1 Bedroom	S-1-1st Floor Apts	1
DDU-2 Studios-(1/10)	DU-2 Studios	S-3-2nd Floor Apts	1
DDU-2 Studios-(2/10)	DU-2 Studios	S-3-2nd Floor Apts	1
DDU-2 Studios-(3/10)	DU-2 Studios	S-3-2nd Floor Apts	1
DDU-2 Studios-(4/10)	DU-2 Studios	S-3-2nd Floor Apts	1
DDU-2 Studios-(5/10)	DU-2 Studios	S-3-2nd Floor Apts	1
DDU-2 Studios-(6/10)	DU-2 Studios	S-3-2nd Floor Apts	1
DDU-2 Studios-(7/10)	DU-2 Studios	S-3-2nd Floor Apts	1
DDU-2 Studios-(8/10)	DU-2 Studios	S-3-2nd Floor Apts	1
DDU-2 Studios-(9/10)	DU-2 Studios	S-3-2nd Floor Apts	1
DDU-2 Studios-(10/10)	DU-2 Studios	S-3-2nd Floor Apts	1

F4. DWELLING UNIT TYPES

01	02	03	04	05	06	07
Name	CFA (ft^2)	Number of Bedrooms	Number in Building	Space Conditioning Systems Assigned	DHW System Name	IAQ Vent Fan Name
DU-1 1 Bedroom	800	1	5	DU-1 1 Bedroom | :Heat Pump System 1:Air Distribution System 1:HVAC Fan 1:2:3	MF0-CHPWH	Default Minimum Balanced IAQ Fan
DU-2 Studios	400	0	10	DU-2 Studios | :Heat Pump System 1:Air Distribution System 1:HVAC Fan 1:2:3	MF0-CHPWH	Default Minimum Balanced IAQ Fan

G1. ENVELOPE GENERAL INFORMATION (conditioned spaces only)

01	02	03	04
Opaque Surfaces & Orientation	Total Gross Surface Area (ft^2)	Total Fenestration Area (ft^2)	Window to Wall Ratio (%)
North-Facing[1]	2600	560	21.54
East-Facing[2]	960	224	23.33
South-Facing[3]	1600	360	22.5
West-Facing[4]	640	64	10
Total	**5800**	**1208**	**20.83**
Roof	1280	0	0

Notes

[1]North-Facing is oriented to within 45 degrees of true north, including 45 00'00" east of north (NE), but excluding 45 00'00" west of north (NW),

[2]East-Facing is oriented to within 45 degrees of true east, including 45 00'00" south of east (SE), but excluding 45 00'00" north of east (NE),

[3]South-Facing is oriented to within 45 degrees of true south, including 45 00'00" west of south (SW), but excluding 45 00'00" east of south (SE),

[4]West-Facing is oriented to within 45 degrees of true west, including 45 00'00" north of west (NW), but excluding 45 00'00" south of west (SW),

G2B. ROOFING PRODUCT SUMMARY (MULTIFAMILY AND COMMON AREAS)

01	02	03	04	05	06
Name	Roof Pitch	Roof Rise (x in 12)	Aged Solar Reflectance	Thermal Emittance	SRI
Attic S-5-Parking Garage	Low slope	0	0.1	0.85	N/A
Attic S-6-1st floor Electrical Room	Low slope	0	0.1	0.85	N/A
Attic S-3-2nd Floor Apts	Low slope	0	0.1	0.85	N/A
Attic S-4-2nd Floor Corridors	Low slope	0	0.1	0.85	N/A

G3. ATTIC

01	02	03	04
Name	Construction	Type	Radiant Barrier
Attic S-5-Parking Garage	Roof-Attic S-5-Parking Garage	Ventilated	Yes
Attic S-6-1st floor Electrical Room	Roof-Attic S-6-1st floor Electrical Room	Ventilated	Yes
Attic S-3-2nd Floor Apts	Roof-Attic S-3-2nd Floor Apts	Ventilated	No
Attic S-4-2nd Floor Corridors	Roof-Attic S-4-2nd Floor Corridors	Ventilated	Yes

G4. NONRESIDENTIAL AIR BARRIER

01	02
Building Story Name	Air Barrier
Com-Floor 1	

G5. OPAQUE SURFACE ASSEMBLY SUMMARY

01	02	03	04	05	06		07	08	09	10
Surface Name	Construction Type	Area (ft^2)	Framing Type	Cavity R-Value	Continuous R-Value		Units	Value	Description of Assembly Layers	Status[1]
					Interior	Exterior				
R-13 Wall12	Exterior Wall	720	Wood	13	N/A	N/A	U-factor	0.1015	Stucco - 7/8 in. Vapor permeable felt - 1/8 in. Composite-1 Gypsum Board - 1/2 in.	N
Slab On Grade18	Underground Floor	1,280	N/A	0	N/A	N/A	F-factor	0.73	Slab Type =Unheated slab on grade Insulation Orientation =None Insulation R-Value =none	N
R-13 Wall121	Interior Wall	200	Wood	13	N/A	N/A	U-factor	0.0952	Stucco - 7/8 in. Vapor permeable felt - 1/8 in. Composite-1 Gypsum Board - 1/2 in.	N
R-30 Roof Attic21	Roof	1,280	Wood	30	N/A	N/A	U-factor	0.0383	AsphaltShingles0_25In Vapor permeable felt - 1/8 in. Plywood - 1/2 in. Air - Cavity - Wall Roof Ceiling - 4 in. or more Composite-2 Gypsum Board - 1/2 in.	N
R-21 Wall w/1 EPS	Exterior Walls	4,480	Wood Framed Wall	21	0	4	U-factor	0.0509	Inside Finish: Gypsum Board Cavity / Frame: R-21 / 2x6 Sheathing / Insulation: R-4 Sheathing Exterior Finish: 3 Coat Stucco	N
R-13 Wall	Exterior Walls	600	Wood Framed Wall	13	0	0	U-factor	0.1013	Inside Finish: Gypsum Board Cavity / Frame: R-13 / 2x4 Exterior Finish: 3 Coat Stucco	N

[1] *Status: N - New, A - Altered, E - Existing*

G5. OPAQUE SURFACE ASSEMBLY SUMMARY

01	02	03	04	05	06		07	08	09	10
Surface Name	Construction Type	Area (ft²)	Framing Type	Cavity R-Value	Continuous R-Value		Units	Value	Description of Assembly Layers	Status[1]
					Interior	Exterior				
R-38 HP Attic Option B	Ceilings (below attic)	4,000	Wood Framed Ceiling	38	0	0	U-factor	0.0253	Over Ceiling Joists: R-28.9 insul. Cavity / Frame: R-9.1 / 2x4 Inside Finish: Gypsum Board	N
R-13 Floor No Crawlspace	Interior Floors	4,000	Wood Framed Floor	13	0	0	U-factor	0.0604	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: R-13 / 2x6 Ceiling Below Finish: Gypsum Board	N
R-0 Floor No Crawlspace	Interior Floors	400	Wood Framed Floor	0	0	0	U-factor	0.1957	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x12 Ceiling Below Finish: Gypsum Board	N
R-30 Roof Attic	Ceilings (below attic)	1,670	Wood Framed Ceiling	30	0	0	U-factor	0.0317	Over Ceiling Joists: R-20.9 insul. Cavity / Frame: R-9.1 / 2x4 Inside Finish: Gypsum Board	N
Roof-Attic S-5-Parking Garage	Attic Roofs	1,200	Wood Framed Ceiling	0	0	0	U-factor	0.6436	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x4	N
Roof-Attic S-6-1st floor Electrical Room	Attic Roofs	70	Wood Framed Ceiling	0	0	0	U-factor	0.6436	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x4	N

[1] *Status: N - New, A - Altered, E - Existing*

G5. OPAQUE SURFACE ASSEMBLY SUMMARY

01	02	03	04	05	06		07	08	09	10
Surface Name	Construction Type	Area (ft²)	Framing Type	Cavity R-Value	Continuous R-Value		Units	Value	Description of Assembly Layers	Status[1]
					Interior	Exterior				
Roof-Attic S-3-2nd Floor Apts	Attic Roofs	4,000	Wood Framed Ceiling	13	0	0	U-factor	0.0781	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: R-13.0 / 2x4 Around Roof Joists: R-0.0 insul.	N
Roof-Attic S-4-2nd Floor Corridors	Attic Roofs	400	Wood Framed Ceiling	0	0	0	U-factor	0.6436	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x4	N
Garage Ext Wall	Exterior Walls	400	Wood Framed Wall	0	0	0	U-factor	0.3609	Inside Finish: Gypsum Board Cavity / Frame: no insul. / 2x4 Exterior Finish: 3 Coat Stucco	N

[1] *Status: N - New, A - Altered, E - Existing*

G6B. OPAQUE DOOR SUMMARY (MULTIFAMILY AND COMMON AREAS)

01	02	03	04
Name	Area (ft²)	Overall U-factor	Status[1]
Entry Door	100	0.5	N
Door	100	0.5	N

[1] *Status: N - New, A - Altered, E - Existing*

G7A. FENESTRATION ASSEMBLY SUMMARY (NONRESIDENTIAL)

01	02	03	04	05	06	07	08	09
Fenestration Assembly Name	**Fenestration Type/ Product Type / Frame Type**	**Certification Method[1]**	**Assembly Method**	**Area (ft^2)**	**Overall U-factor**	**Overall SHGC**	**Overall VT**	**Status[2]**
Double Metal Tinted	Vertical fenestration Fixed window Metal	Default 110.6	Site built	320	0.71	0.6	0.77	N

[1] Notes: Newly installed fenestration shall have a certified NFRC Label Certificate or use the CEC default tables found in Table 110.6-A and Table 110.6-B. Center of Glass (COG) values are for the glass-only, determined by the manufacturer, and are shown for ease of verification. Site-built fenestration values are calculated per Nonresidential Appendix NA6 and are used in the analysis.

[2] Status: N - New, A - Altered, E - Existing

G7B. FENESTRATION SUMMARY (MULTIFAMILY AND COMMON AREAS)

01	02	03	04	05	06	07	08	09	10	11	12	13
Fenestration Name	Fenestration Type/ Product Type / Frame Type	Parent Surface	Azimuth	Multiplier	Area (ft^2)	Overall U-factor	U-factor Source	Overall SHGC	SHGC Source	Overall VT	Exterior Shading	Status[1]
Front Windows	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	Front Wall	0	1	200	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
Left Windows	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	Left Wall	90	1	40	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
Back Windows	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	Back Wall	180	1	180	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
Right Windows	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	Right Wall	270	1	32	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
Front Windows 2	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	Front Wall 2	0	1	200	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
Left Windows 2	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	Left Wall 2	90	1	24	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
Back Windows 2	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	BackWall	180	1	180	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N

[1] *Status: N - New, A - Altered, E - Existing*

G7B. FENESTRATION SUMMARY (MULTIFAMILY AND COMMON AREAS)

01	02	03	04	05	06	07	08	09	10	11	12	13
Fenestration Name	**Fenestration Type/ Product Type / Frame Type**	**Parent Surface**	**Azimuth**	**Multiplier**	**Area (ft^2)**	**Overall U-factor**	**U-factor Source**	**Overall SHGC**	**SHGC Source**	**Overall VT**	**Exterior Shading**	**Status[1]**
Right Windows 2	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	Right Wall 2	270	1	32	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N

[1] Status: N - New, A - Altered, E - Existing

G8. OVERHANG DETAILS

01	02	03	04	05	06	07
Fenestration Tag/ ID	**Azimuth**	**Depth (ft)**	**Height from Top of Sill to Overhang (ft)**	**Right Extent (ft)**	**Left Extent (ft)**	**Flap Height**
East Windows16	90	6	8.1	6	6	N/A

H1. DRY SYSTEM EQUIPMENT (FURNACES, AIR HANDLING UNITS, HEAT PUMPS, VRF, ECONOMIZERS ETC.)

01	02	03	04	05	06	07	08	09	10	11	12
			Heating				**Cooling**				
Equipment Name	**Equipment Type**	**Qty**	**Total Heating Output (kBtu/h)**	**Supp Heat Output (kBtu/h)**	**Efficiency Unit**	**Efficiency**	**Total Cooling Output (kBtu/h)**	**Efficiency Unit**	**Efficiency**	**Economizer Type (if present)**	**Status[1]**
Retail Mech. System	Package SZ VAV Heat Pump Air System	1	62.49	0	COP HSPF2	3.75 8.5	57.61	EER2 SEER2	12 14.5	Differential DB	N

[1] Status: N - New, A - Altered, E - Existing

H2. DWELLING UNIT HVAC HEATING AND COOLING SYSTEMS

01	02	03	04	05	06	07	08	09	10	11	12	13
Dwelling Unit Type	Equipment Name	Equipment Type	Quantity	Air Distribution System Name	Fan System name	Heating				Cooling		
						Heat Output at 47	Heat Output at 17	Efficiency Unit	Efficiency	Total Cooling Output	Efficiency Unit	Efficiency
DU-1 1 Bedroom	Heat Pump System 1	Central split HP N/A	5	Air Distribution System 1	HVAC Fan 1	38,000	32,000	HSPF2	8.2	N/A	EER2 SEER2	13 15
DU-2 Studios	Heat Pump System 1	Central split HP N/A	10	Air Distribution System 1	HVAC Fan 1	38,000	32,000	HSPF2	8.2	N/A	EER2 SEER2	13 15

H3. NONRESIDENTIAL / COMMON USE AREA FAN SYSTEMS SUMMARY

01	02	03	04	05	06	07	08	09	10	11	12	13
Name or Item Tag	Qty	Design OA CFM	Supply Fan				Return / Relief Fan					Status[1]
			CFM	Power	Power Units	Control	Fan Type	CFM	Power	Power Units	Control	
Retail Mech. System	1	320	2,400	1.2	BHP	VSD	N/A	N/A	N/A	N/A	N/A	N

[1] *Status: N - New, A - Altered, E - Existing*

H3a. MULTIFAMILY / COMMON USE AREA FAN SYSTEMS SUMMARY

01	02	03	04	05
Name	Type	Power	Power Units	Status
HVAC Fan 1	Fixed speed	0.45	W/cfm	N/A

H3b. MULTIFAMILY / COMMON USE AREA IAQ FAN SYSTEMS SUMMARY

01	02	03	04	05	06
Name	Type	Airflow (CFM)	Power	Power Units	Status
Central Vent Sys 1	Exhaust	200	0.5	W/cfm	N/A

H4. MULTIFAMILY HVAC DISTRIBUTION

01	02	03	04	05	06	07	08
Name	Type	Duct Ins. R-value Supply	Duct Ins. R-value Return	Duct Location Supply	Duct Location Return	Verified Duct Design Surface Area	
						Supply	Return
Air Distribution System 1	Conditioned space-entirely (Non-Verified)	R-8	R-8	Conditioned Zone	Conditioned Zone	N/A	N/A

H5. GENERAL EXHAUST FAN SUMMARY

01	02	03	04	05	06	07	08
System ID	Zone Name	Qty	CFM	Power	Power Units	Continuous Operation?	Status[1]
Retail Zone5	1-Retail Zone	2	50	0.02	BHP	No	N

[1] *Status: N - New, A - Altered, E - Existing*

H8. SYSTEM SPECIAL FEATURES

01	02	03	04
System Name	Equipment Type	Interlocks per 140.4(n)[1]	Other Special Features and Controls
Retail Mech. System	Package SZ VAV Heat Pump Air System	N/A	Zone(s) With CO2 Sensor Vent. Control Differential DB

Notes: This table includes controls related to the performance path only. For projects using the prescriptive path, mandatory and prescriptive controls requirements are documented on the LMCC-MCH-E.

[1] *Yes = interlocks are provided, No = interlocks are not provided, NA means no operable openings.*

H8. SYSTEM SPECIAL FEATURES

01	02	03	04
System Name	**Equipment Type**	**Interlocks per 140.4(n)[1]**	**Other Special Features and Controls**
Central HPWH1 - SHW	Service Hot Water	N/A	Fixed Temperature Control

Notes: This table includes controls related to the performance path only. For projects using the prescriptive path, mandatory and prescriptive controls requirements are documented on the LMCC-MCH-E.

[1] Yes = interlocks are provided, No = interlocks are not provided, NA means no operable openings.

H9. NONRESIDENTIAL / COMMON USE AREA & HOTEL/MOTEL VENTILATION

01	02	03	04	05	06	07
Zone Name	**Mechanical Ventilation**				**Conditioned Area (sf)**	**DCV or Occupant Sensor Controls, or Both**
	Ventilation Function	**# of People**	**Supply OA CFM**	**Exhaust CFM**		
1-Retail Zone	Retail - Sales	10.67	320	100	1280	DCV
S-2-1st Floor Corridors	Residential - Common corridors	2	70	70	400	N/A
S-6-1st floor Electrical Room	General - Unoccupied	0.11	60	60	70	N/A
S-4-2nd Floor Corridors	Residential - Common corridors	2	70	70	400	N/A

H10. MULTIFAMILY DWELLING UNIT TYPE CENTRAL / INDIVIDUAL VENTILATION

01	02	03	04	05	06	07	08	09	10	11	12	13
Dwelling Unit Type	**IAQ Option**	**Central Fan (If applicable)**					**Individual Fan (if applicable)**					
		IAQ Fan Type Type	**Supply Airflow CFM**	**Supply Fan Efficacy W/CFM**	**Exhaust CFM**	**Exhaust Fan Efficacy W/CFM**	**IAQ Fan Type**	**Count**	**Airflow CFM**	**Fan Efficacy W/CFM**	**Recovery Efficiency SRE**	**Recovery Efficiency ASRE**
DU-1 1 Bedroom	Default Minimum Balanced IAQ Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	39	N/A	N/A	N/A
DU-2 Studios	Default Minimum Balanced IAQ Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	27	N/A	N/A	N/A

H11. ZONAL SYSTEM AND TERMINAL UNIT SUMMARY

01	02	03	04	05	06	07	08	09	10	11	12
System ID	System Type	Qty	Rated Capacity (kBtuh)		Airflow (cfm)			Fan			VSD
			Heating	Cooling	Design	MIn.	Min. Ratio	Power	Power Units	Cycles	
1-Retail Zone-Trm	Variable Air Volume No Reheat Box	1	N/A	N/A	2,400	600	0.25	N/A	N/A	N/A	☐

I1. WATER HEATER EQUIPMENT SUMMARY

01	02	03	04	05	06	07	08	09	10	11	12	13	14
Name	Heater Element Type	Tank Type	Qty	Tank Vol (gal)	Rated Input	Rated Input Unit	Efficiency	Efficiency Unit	Tank Insulation R-value Int/Ext	Standby Loss Fraction	1st Hr. Rating or Flow Rate (gal)	Heat Pump Type	Tank Location or Ambient Condition
Instantaneous Electric2	Electricity	Instantaneous	1	1	2.3	kW	0.98	UEF	N/A	N/A	8	N/A	N/A

I2. MULTI-FAMILY WATER HEATING SYSTEM DETAIL

01	02	03	04	05	06	07	08
System Name	Configuration	Type	Qty in System	Dwelling Unit Distribution Type	Water Heater Name	Solar Heating System	Is Compact Distribution
MF0-CHPWH	Domestic Hot Water (DHW)	Central	1	Standard Distribution System	MF0-CHPWH - heater	N/A	N/A

I3. MULTIFAMILY & HOTEL/MOTEL WATER HEATER EQUIPMENT SUMMARY - CHPWH

01	02	03	04	05	06	07	08
Name	Brand/Model	Number of Compressors	Primary Tank Volume (gal)	Tank Count	Tank R-value	Tank Location	Air Source
MF0-CHPWH	AOSmithCAHP 120 (120 gal)	1	410	1	20	Outside	Outside

I5. RECIRCULATION LOOPS

01	02	03	04	05	06
Water Heating System Name	Number of Recirculation Loops	Loop Insulation Thickness (in)	Recirculation Loop Location	Recirculation Pump Power	Recirculation Pump Power Units
MF0-CHPWH	1	1.5	Conditioned	109.06	Watts

I8. WATER HEATING - DRAIN WATER HEAT RECOVERY

01	02	03	04	05
Dwelling Unit Type	DHW System and DWHR Names	Installation Configuration	Shower Drains	HERS Verification
DU-1 1 Bedroom	MF0-CHPWH - 1 - DWHR-1	Equal Flow	11	Required
DU-2 Studios	MF0-CHPWH - 1 - DWHR-2	Equal Flow	10	Required

K1. INDOOR CONDITIONED LIGHTING GENERAL INFO

01	02	03	04	05	06
Occupancy Type[1,3]	Conditioned Floor Area[2] (ft2)	Installed Lighting Power (Watts)	Lighting Control Credits (Watts)	Additional (Custom) Allowance	
				Area Category Footnotes (Watts)	Area Category Footnotes (Watts)
Retail Merchandise Sales	1280	560	0	0	0
Building Totals:	**1280**	**560**	**0**	**0**	**0**

[1]*See Table 140.6-C*

[2]*See LMCC-LTI01--E for unconditioned spaces*

[3]*Lighting information for existing spaces modeled is not included in this table*

K2. INDOOR CONDITIONED LIGHTING SCHEDULE

Luminaire Schedule (includes all permanent installed lighting in conditioned space, and portable lighting over 0.3 w/ft^2 in offices)

01	02	03	04	05	06
Name or Item Tag	Complete Luminaire Description (i.e. 3-lamp fluorescent troffer, F32T8, one dimmable electronic ballast)	Installed Watts (Conditioned)			
		Watts per luminaire	How is Wattage determined	Total Number of Luminaires	Installed Watts
F-1	Suspended LED	28	See Other Section	30	840

[1]*If lighting power densities were used in the compliance model Building Departments will need to check prescriptive forms for Luminaire Schedule details.*

K3. INDOOR CONDITIONED LIGHTING CONTROL CREDITS

Lighting Control Credits Schedule (includes all lighting controls installed in conditioned space for compliance credit per 140.6(a)2 and Table 140.6-A)

01	02	03	04	05	06	07	08	09
Area Description	Primary Function Area (must meet requirements of Table 140.6-A and 170.2-L)	Type of Lighting Control	Power Adjustment Factor (PAF)	Luminaire Item Tag	Watts per Luminaire	# of Luminaires	Lighting Controlled (Watts)	Control Credit (Watts)
S-7-Retail Zone	Retail Merchandise Sales	NotApplicable	NotApplicable	F-1	28	20	560	0
S-2-1st Floor Corridors	Corridor	NotApplicable	NotApplicable	F-1	28	5	140	0
S-4-2nd Floor Corridors	Corridor	NotApplicable	NotApplicable	F-1	28	5	140	0
							Lighting Control Credits (Conditioned) Total (Watts)	0

K4. INDOOR CONDITIONED LIGHTING MANDATORY LIGHTING CONTROL

Building Level Controls

01	02
Mandatory Demand Response 110.12(c)	Shut-Off Controls 130.1(c) & 160.5(b)4C
NA	NA

Area Level Controls (includes all lighting controls installed in conditioned space to meet mandatory requirements per 130.1)

03	04	05	06	07	08	09
Area Description	Area Category Primary Function Area	Area Controls 130.1(a) & 160.5(b)4A	Multi-Level Controls 130.1(b) & 160.5(b)4B	Shut-Off Controls 130.1(c) & 160.5(b)4C	Primary Daylighting 130.1(d) & 160.5(b)4D	Secondary Daylighting 140.5(d) & 160.5(b)4D
Corridors	Corridor	Required	Required	Required	NA	NA

Documentation Author's Declaration Statement

1. I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name:	Documentation Author Signature:
Company: DEBUG	Signature Date:
Address:	CEA/HERS Certification Identification (if applicable):
City/State/Zip: ,	Phone:

Responsible Person's Declaration statement

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I understand that a registered copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections, and I will take the necessary steps to accomplish this requirement.
6. I understand that a registered copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy, and I will take the necessary steps to accomplish these requirements.

Responsible Designer Name: Bernard Parker & Assoc.	Responsible Designer Signature:
Company:	Date Signed:
Address: 573 Oak Drive	License #:
City/State/Zip: Sacramento, CA 95000	Title:
Phone:	Scope:

Regulatory Advisory

November 18, 2022

LOW-RISE MULTIFAMILY COMPLIANCE FORMS FOR THE 2022 BUILDING ENERGY EFFICIENCY STANDARDS

Background

The 2022 Building Energy Efficiency Standards (Energy Code), which goes into effect January 1, 2023, introduced new requirements for low-rise multifamily (LRMF) buildings and includes the registration of new LRMF compliance documentation. CalCERTS, Inc. (CalCERTS) and ConSol Home Energy Efficiency Rating Services, Inc. (CHEERS) have each applied to the California Energy Commission (CEC) to be certified as residential data registries for the 2022 Energy Code. Both CalCERTS and CHEERS are creating new systems to process and register the new LRMF compliance documents required by the 2022 Energy Code.

While development is ongoing, both CalCERTS and CHEERS have informed the CEC that they will not be able to complete required programming and testing of the new LRMF component of their residential data registries until after March 1, 2023. As a result, for LRMF buildings only, [1] there will be no approved data registry capable of registering compliance documentation for this building type until at least the end of March 2023. Document registration with an approved residential data registry is required by the 2022 Energy Code for both newly constructed buildings and additions or alterations to existing buildings (specific code references are listed below).

Official Guidance

CEC staff recommends local authorities having jurisdiction (AHJs) take the following steps to ensure that permitting for LRMF buildings under the 2022 Energy Code is not delayed.

CEC staff intends to create and issue fillable PDF compliance forms that can be used to demonstrate compliance in LRMF buildings until those forms can be registered with an approved residential data registry. Responsible persons, as defined by section 10-103(a), should utilize those fillable PDF compliance forms to document compliance with code requirements including field verification and diagnostic testing. Upon completion of the fillable PDF compliance forms, the responsible person should submit the compliance forms directly to the AHJ and retain the completed PDF compliance forms for later registration with the data registry. To comply with the 2022 Energy Code section 10-103(a), the responsible person shall register all compliance documentation with a data registry once an approved residential data registry capable of processing these forms becomes available.

Local AHJs should consider suspending enforcement of the impacted code sections (see below) that require registration of LRMF compliance documentation until an approved residential data registry capable of processing these forms becomes available. At that point, responsible persons shall register the documents with the approved data registry, as discussed above, and additional guidance will be provided by the CEC.

AHJs should consider holding digital or paper copies of the documents submitted to them as demonstration of compliance for retention and eventual registration.

Impacted Code Sections

The following sections of the 2022 Energy Code are affected by the lack of a CEC approved residential data registry capable of processing LRMF compliance documentation:

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1 Registration of single-family compliance documentation for the 2022 Energy Code is not affected by this issue. Staff reviewed the data registries' applications for the single-family residential and nonresidential components of both the CalCERTS and CHEERS data registries and the CEC will consider approval of these registries on December 14, 2022, for processing of these 2022 compliance documents beginning January 1, 2023.

- 10-103(a)1B Certificate of compliance
- 10-103(a)2A [paragraph 3] Application for a building permit
- 10-103(a)3C Certificate of installation
- 10-103(a)3F Certificate of installation: Availability
- 10-103(a)5B Certificate of verification
- 10-103(a)5C Certificate of verification: Availability
- 10-103(b)1A Compliance information to be provided by Builder
- 10-103(d)1 Enforcement agency requirements: Permits
- 10-103(d)2 Enforcement agency requirements: Inspection

Further Information

For additional information or questions, please contact the Energy Standards (Title 24) Hotline at 1-800-772-3300, toll-free in California or via email at Title24@energy.ca.gov.