RESIDENTIAL MEASURES SUMMARY — RMS-1

Project Name	Building Type			Date
Glencoe Ct-Sunnyvale	☐ Single Family ☐ Multi Family	☐ Addition Alone ☐ Existing+ Addition/Alteration		12/13/2022
Project Address	**California Energy Climate Zone**	**Total Cond. Floor Area**	**Addition**	**# of Units**
721 Glencoe Ct. Sunnyvale	CA Climate Zone 04	2,419	498	1

INSULATION

Construction	Type	Cavity	Area (ft²)	Special Features	Status
Wall	Wood Framed	- no insulation -	262		Existing
Wall	Wood Framed	- no insulation -	262		Existing
Wall	Wood Framed	- no insulation -	192		Existing
Floor	Wood Framed w/Crawl Space	- no insulation -	1,921		Existing
Roof	Wood Framed Attic	- no insulation -	1,921		Existing
Wall	Wood Framed	- no insulation -	320		Existing
Demising	Wood Framed	- no insulation -	100		Existing
Wall	Wood Framed	R 15	362		New

FENESTRATION — Total Area: 415 | Glazing Percentage: 17.2% | New/Altered Average U-Factor: 0.28

Orientation	Area(ft²)	U-Fac	SHGC	Overhang	Sidefins	Exterior Shades	Status
Rear (NW)	73.0	0.580	0.65	none	none	N/A	Existing
Rear (NW)	33.0	0.530	0.65	none	none	N/A	Existing
Left (SW)	18.0	0.580	0.65	none	none	N/A	Existing
Left (W)	48.0	0.280	0.20	none	none	N/A	New
Rear (N)	48.0	0.580	0.65	none	none	N/A	Existing
Left (SW)	82.0	0.280	0.20	none	none	N/A	New
Rear (NW)	109.0	0.280	0.20	none	none	N/A	New
Skylight	4.0	1.980	0.80	none	none	N/A	Existing

HVAC SYSTEMS

Qty.	Heating	Min. Eff	Cooling	Min. Eff	Thermostat	Status
1	Central Furnace	75% AF UE	5 plit Air Conditioner	10.0 SEER	Setback	Existing

HVAC DISTRIBUTION

Location	Heating	Cooling	Duct Location	Duct R-Value	Status
Furnace/AC	Ducted	Ducted	Attic	8.0	Altered

WATER HEATING

Qty.	Type	Gallons	Min. Eff	Distribution	Status

RESIDENTIAL MEASURES SUMMARY — RMS-1

Project Name: Glencoe Ct-Sunnyvale | Building Type: ☐ Single Family ☐ Multi Family ☐ Addition Alone ☐ Existing+ Addition/Alteration | Date: 12/13/2022
Project Address: 721 Glencoe Ct. Sunnyvale | California Energy Climate Zone: CA Climate Zone 04 | Total Cond. Floor Area: 2,419 | Addition: 498 | # of Units: 1

INSULATION

Construction	Type	Cavity	Area (ft²)	Special Features	Status
Door	Opaque Door	- no insulation -	23		New
Roof	Wood Framed Attic	R 38	494		New
Floor	Wood Framed w/Crawl Space	R 19	498		New
Demising	Wood Framed	- no insulation -	100		Existing

FENESTRATION — Total Area: 415 | Glazing Percentage: 17.2% | New/Altered Average U-Factor: 0.28

Orientation	Area(ft²)	U-Fac	SHGC	Overhang	Sidefins	Exterior Shades	Status

HVAC SYSTEMS

Qty.	Heating	Min. Eff	Cooling	Min. Eff	Thermostat	Status

HVAC DISTRIBUTION

Location	Heating	Cooling	Duct Location	Duct R-Value	Status

WATER HEATING

Qty.	Type	Gallons	Min. Eff	Distribution	Status

EnergyPro 8.2 by EnergySoft Sol User Number: 6262 ID: 21-12114 Page 16 of 21

RESIDENTIAL MEASURES SUMMARY — RMS-1

Project Name: Glencoe Ct-Sunnyvale | Building Type: ☐ Single Family ☐ Multi Family ☐ Addition Alone ☐ Existing+ Addition/Alteration | Date: 12/13/2022
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FENESTRATION — Total Area: 415 | Glazing Percentage: 17.2% | New/Altered Average U-Factor: 0.28

Orientation	Area(ft²)	U-Fac	SHGC	Overhang	Sidefins	Exterior Shades	Status

HVAC SYSTEMS

Qty.	Heating	Min. Eff	Cooling	Min. Eff	Thermostat	Status

HVAC DISTRIBUTION

Location	Heating	Cooling	Duct Location	Duct R-Value	Status

WATER HEATING

Qty.	Type	Gallons	Min. Eff	Distribution	Status

EnergyPro 8.2 by EnergySoft Sol User Number: 6262 ID: 21-12114 Page 16 of 21

2019 Low-Rise Residential Mandatory Measures Summary

Requirements for Ventilation and Indoor Air Quality:	
§ 150.0(o)1:	Requirements for Ventilation and Indoor Air Quality. All dwelling units must meet the requirements of ASHRAE Standard 62.2, Ventilation and Acceptable Indoor Air Quality in Residential Buildings subject to the amendments specified in § 150.0(o)1.
§ 150.0(o)1C:	Single Family Detached Dwelling Units. Single family detached dwelling units, and attached dwelling units not sharing ceilings or floors with other dwelling units, occupiable spaces, public garages, or commercial spaces must have mechanical ventilation airflow provided at rates determined by ASHRAE 62.2 Sections 4.1.1 and 4.1.2 and as specified in § 150.0(o)1C.
§ 150.0(o)1E:	Multifamily Attached Dwelling Units. Multifamily attached dwelling units must have mechanical ventilation airflow provided at rates in accordance with Equation 150.0-B and must be either a balanced system or continuous supply or continuous exhaust system. If a balanced system is not used, all units in the building must use the same system type and the dwelling-unit envelope leakage must be ≤ 0.3 CFM at 50 Pa (0.2 inch water) per square foot of dwelling unit envelope surface area and verified in accordance with Reference Residential Appendix RA3.
§ 150.0(o)1F:	Multifamily Building Central Ventilation System. Central ventilation systems that serve multiple dwelling units must be balanced to provide ventilation airflow for each dwelling unit served at a rate equal to or greater than the rate specified by Equation 150.0-B. All units airflows must be within 20 percent of the unit with the lowest airflow rate as it relates to the individual unit's minimum required airflow rate needed for com
§ 150.0(o)1G:	Kitchen Range Hoods. Kitchen range hoods must be rated for sound in accordance with Section 7.2 of ASHRAE 62.2.
§ 150.0(o)2:	Field Verification and Diagnostic Testing. Dwelling unit ventilation airflow must be verified in accordance with Reference Residential Appendix RA3.7. A kitchen range hood must be verified in accordance with Reference Residential Appendix RA3.7.4.3 to confirm it is rated by HVI to comply with the airflow rates and sound requirements as specified in Section 5 and 7.2 of ASHRAE 62.2.
Pool and Spa Systems and Equipment Measures:	
§ 110.4(a):	Certification by Manufacturers. Any pool or spa heating system or equipment must be certified to have all of the following: a thermal efficien that complies with the Appliance Efficiency Regulations; an on-off switch mounted outside of the heater that allows shutting off the heater without adjusting the thermostat setting; a permanent weatherproof plate or card with operating instructions; and must not use electric resistance heating.
§ 110.4(b)1:	Piping. Any pool or spa heating system or equipment must be installed with at least 36 inches of pipe between the filter and the heater, or dedicated suction and return lines, or built-in or built-up connections to allow for future solar heating.
§ 110.4(b)2:	Covers. Outdoor pools or spas that have a heat pump or gas heater must have a cover.
§ 110.4(b)3:	Directional Inlets and Time Switches for Pools. Pools must have directional inlets that adequately mix the pool water, and a time switch that will allow all pumps to be set or programmed to run only during off-peak electric demand periods.
§ 110.5:	Pilot Light. Natural gas pool and spa heaters must not have a continuously burning pilot light.
§ 150.0(p):	Pool Systems and Equipment Installation. Residential pool systems or equipment must meet the specified requirements for pump sizing rate, piping, filters, and valves.
Lighting Measures:	
§ 110.9:	Lighting Controls and Components. All lighting control devices and systems, ballasts, and luminaires must meet the applicable requirements of § 110.9.
§ 150.0(k)1A:	Luminaire Efficacy. All installed luminaires must meet the requirements in Table 150.0-A.
§ 150.0(k)1B:	Blank Electrical Boxes. The number of electrical boxes that are more than five feet above the finished floor and do not contain a luminaire o other device must be no greater than the number of bedrooms. These electrical boxes must be served by a dimmer, vacancy sensor contro fan speed control.
§ 150.0(k)1C:	Recessed Downlight Luminaires in Ceilings. Luminaires recessed into ceilings must meet all of the requirements for: insulation contact (IC) labeling; air leakage; sealing; maintenance; and socket and light source as described in § 150.0(k)1C.
§ 150.0(k)1D:	Electronic Ballasts for Fluorescent Lamps. Ballasts for fluorescent lamps rated 13 watts or greater must be electronic and must have an output frequency no less than 20 kHz.
§ 150.0(k)1E:	Night Lights, Step Lights, and Path Lights. Night lights, step lights and path lights are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided they are rated to consume no more than 5 watts of power and emit no more than 150 lumens.
§ 150.0(k)1F:	Lighting Integral to Exhaust Fans. Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of § 150.0(k).
§ 150.0(k)1G:	Screw based luminaires. Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8.
§ 150.0(k)1H:	Light Sources in Enclosed or Recessed Luminaires. Lamps and other separable light sources that are not compliant with the JA8 elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
§ 150.0(k)1I:	Light Sources in Drawers, Cabinets, and Linen Closets. Light sources internal to drawers, cabinetry or linen closets are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided that they are rated to consume no more than 5 watts of power, er more than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is c
§ 150.0(k)2A:	Interior Switches and Controls. All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A.
§ 150.0(k)2B:	Interior Switches and Controls. Exhaust fans must be controlled separately from lighting systems.
§ 150.0(k)2C:	Interior Switches and Controls. Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually turned ON and OFF.*
§ 150.0(k)2D:	Interior Switches and Controls. Controls and equipment must be installed in accordance with manufacturer's instructions.
§ 150.0(k)2E:	Interior Switches and Controls. Controls must not bypass a dimmer, occupant sensor, or vacancy sensor function if the control is installed to comply with § 150.0(k).
§ 150.0(k)2F:	Interior Switches and Controls. Lighting controls must comply with the applicable requirements of § 110.9.

Building Safety Division
City of Sunnyvale

Dec 22 2022

For installation in the City of Sunnyvale subject to code requirements
DIGITAL SET APPROVED
By Jonathan Kawamura
BUILDING-PLUMBING-ELECTRICAL-MECHANICAL
The stamping of this plan shall not be held to permit or to be an approval of the violation of any provision of any City or State Law.

JOB COPY
These plans must be kept on the job site at all times.
CITY OF SUNNYVALE

2019 Low-Rise Residential Mandatory Measures Summary

Ducts and Fans Measures:	
§ 110.8(d)3:	Ducts. Insulation installed on an existing space-conditioning duct must comply with § 604.0 of the California Mechanical Code (CMC). If a contractor installs the insulation, the contractor must certify to the customer, in writing, that the insulation meets this requirement.
§ 150.0(m)1:	CMC Compliance. All air-distribution system ducts and plenums must meet the requirements of the CMC §§ 601.0, 602.0, 603.0, 604.0, 605.0 and ANSI/SMACNA-006-2006 HVAC Duct Construction Standards Metal and Flexible 3rd Edition. Portions of supply-air and return-air ducts plenums must be insulated to a minimum installed level of R-6.0 or a minimum installed level of R-4.2 when ducts are entirely in conditione space as confirmed through field verification and diagnostic testing (RA3.1.4.3.8). Portions of the duct system completely exposed and surrounded by directly conditioned space are not required to be insulated. Connections of metal ducts and inner core of flexible ducts mus mechanically fastened. Openings must be sealed with mastic, tape, or other duct-closure system that meets the applicable requirements of 181, UL 181A, or UL 181B or aerosol sealant that meets the requirements of UL 723. If mastic or tape is used to seal openings greater than ¼ inch, the combination of mastic and either mesh or tape must be used. Building cavities, support platforms for air handlers, and plenums designed or constructed with materials other than sealed sheet metal, duct board or flexible duct must not be used to convey conditioned Building cavities and support platforms may contain ducts. Ducts installed in cavities and support platforms must not be compressed to ca reductions in the cross-sectional area
§ 150.0(m)2:	Factory-Fabricated Duct Systems. Factory-fabricated duct systems must comply with applicable requirements for duct construction, connections, and closures; joints and seams of duct systems and their components must not be sealed with cloth back rubber adhesive duc tapes unless such tape is used in combination with mastic and draw bands.
§ 150.0(m)3:	Field-Fabricated Duct Systems. Field-fabricated duct systems must comply with applicable requirements for: pressure-sensitive tapes, mastics, sealants, and other requirements specified for duct construction.
§ 150.0(m)7:	Backdraft Damper. Fan systems that exchange air between the conditioned space and outdoors must have backdraft or automatic dampers
§ 150.0(m)8:	Gravity Ventilation Dampers. Gravity ventilating systems serving conditioned space must have either automatic or readily accessible, manually operated dampers in all openings to the outside, except combustion inlet and outlet air openings and elevator shaft vents.
§ 150.0(m)9:	Protection of Insulation. Insulation must be protected from damage, sunlight, moisture, equipment maintenance, and wind. Insulation expo to weather must be suitable for outdoor service. For example, protected by aluminum, sheet metal, painted canvas, or plastic cover. Cellula foam insulation must be protected as above or painted with a coating that is water retardant and provides shielding from solar radiation.
§ 150.0(m)10:	Porous Inner Core Flex Duct. Porous inner core flex ducts must have a non-porous layer between the inner core and outer vapor barrier.
§ 150.0(m)11:	Duct System Sealing and Leakage Test. When space conditioning systems use forced air duct systems to supply conditioned air to an occupiable space, the ducts must be sealed and duct leakage tested, as confirmed through field verification and diagnostic testing, in accordance with § 150.0(m)11 and Reference Residential Appendix RA3.
§ 150.0(m)12:	Air Filtration. Space conditioning systems with ducts exceeding 10 feet and the supply side of ventilation systems must have MERV 13 or equivalent filters. Filters for space conditioning systems must have a two inch depth or can be one inch if sized per Equation 150.0-A. Pressu drops and labeling must meet the requirements in §150.0(m)12. Filters must be accessible for regular service.*
§ 150.0(m)13:	Space Conditioning System Airflow Rate and Fan Efficacy. Space conditioning systems that use ducts to supply cooling must have a hole for the placement of a static pressure probe, or a permanently installed static pressure probe in the supply plenum. Airflow must be per ton of nominal cooling capacity, and have a cooling unit fan efficacy ≤ 0.45 watts per CFM for gas furnace air handlers and 0.58 watts per CFM for all others. Small duct high velocity systems must provide an airflow of ≥ 250 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.62 watts per CFM. Field verification testing is required in accordance with Reference Residential Appendix RA3.3.*

HVAC SYSTEM HEATING AND COOLING LOADS SUMMARY

Project Name	Date
Glencoe Ct-Sunnyvale	12/13/2022
System Name	**Floor Area**
Furnace/AC	2,419

ENGINEERING CHECKS

Number of Systems	1
Heating System	
Output per System	70,000
Total Output (Btuh)	70,000
Output (Btuh/sqft)	28.9
Cooling System	
Output per System	60,000
Total Output (Btuh)	60,000
Total Output (Tons)	5.0
Total Output (Btuh/sqft)	24.8
Total Output (sqft/Ton)	483.8
Air System	
CFM per System	1,200
Airflow (cfm)	1,200
Airflow (cfm/sqft)	0.50
Airflow (cfm/Ton)	240.0
Outside Air (%)	10.3%
Outside Air (cfm/sqft)	0.05

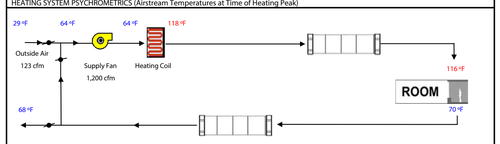
SYSTEM LOAD

	COIL COOLING PEAK CFM	COIL COOLING PEAK Sensible	COIL COOLING PEAK Latent	COIL HTG. PEAK CFM	COIL HTG. PEAK Sensible
Total Room Loads	2,670	50,533	2,182	1,375	68,084
Return Vented Lighting		0			
Return Air Ducts		1,972			3,226
Return Fan		0			0
Ventilation	123	1,626	690	123	5,114
Supply Fan		0			0
Supply Air Ducts		1,972			3,226
TOTAL SYSTEM LOAD		56,102	2,871		79,650

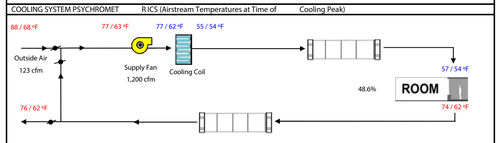
HVAC EQUIPMENT SELECTION

Existing HVAC		0	57,822	70,000
Total Adjusted System Output (Adjusted for Peak Design conditions)		0	57,822	70,000
Note: values above given at ARI conditions	TIME OF SYSTEM PEAK		Aug 3 PM	Jan 1 AM

HEATING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Heating Peak)



COOLING SYSTEM PSYCHROMET R ICS (Airstream Temperatures at Time of Cooling Peak)



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LICENSED ARCHITECT
THIEU VINH PHAN
NO. C23436
REN. 4-30-23
STATE OF CALIFORNIA

PROJECT:
721 GLENCOE CT. ADDITION

ADDRESS:
721 GLENCOE CT.
SUNNYVALE CA 94087

TITLE:
T24 ENGERGY COMPLIANCE

REV.	DATE	REMARKS
01	11.22.2022	BUILDING

NOTES:

SUBMITTAL:
BUILDING

DRAWN BY:
PP

DATE:
JUNE 16 2022

SCALE:
AS NOTED

SHEET NUMBER:
T24