

SOLAR ENERGY
FEASIBILITY REPORT (**PRELIMINARY****)**

PREPARED BY:

Solargy, Inc.
22028 Ventura Boulevard, Suite 207
Woodland Hills, CA 91364
(818) 347-6096 www.solargy.com
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TENTATIVE TRACT MAP NUMBER:

82152

PROJECT ADDRESS:

1720-1770 North Vine Street; 1746-1760 North Ivar Avenue; 1733 and 1741 Argyle Avenue;
and 6236, 6270, and 6334 West Yucca Street
Los Angeles, California 90028

OWNER:

MCAF VINE LLC
1995 Broadway
New York, NY 10023
(212) 595-1831

EXISTING LAND USE:

Three commercial buildings.

PROJECT DESCRIPTION:

The proposed West Site development would involve the demolition of the existing commercial building and the construction of (a) a 35-story, 449-unit mixed-use building with ground floor commercial uses, a ground floor courtyard, and a residents-only mezzanine amenity space (collectively, the “West Building”); (b) an 11-story, 68-unit senior affordable housing building with ground floor commercial uses (the “West Senior Building”); and (c) a five-story subterranean parking garage. The proposed East Site would preserve the Capitol Records and Gogerty Buildings and add a 46-story, 423-unit mixed-use building with ground floor commercial uses, a ground floor courtyard, and a residents-only mezzanine amenity space (the “East Building”); a 11-story, 65-unit senior affordable housing building with ground floor commercial uses (the “East Senior Building”); and a five-story subterranean parking garage. The maximum height of the new West Side Buildings is 469 feet, while that of the East Side buildings will be 595 feet. Minimum grade level setback from the Vine Street property line is 15 feet. Minimum setbacks from the north and south property lines will be 5 feet, respectively. Minimum setback from the east property line will be 0 feet. Roofs are suitable for collector mounting on same; racks would be needed to increase the tilt.

ADJACENT LAND USE AND STRUCTURES:

To the west, about 60 feet across Ivar Avenue, are 1 and 2-story commercial buildings. To the north, about 105 feet across Yucca Avenue, are a 1-story office and an 8-story office/store. To the east, about 80 feet across Argyle Avenue, is a 2-story multi-unit building and a multi-story multi-unit building. To the south, with minimal setback, is a 1-story store, theater and Also, to the south, is a parking lot and beyond a 1-story restaurant. To the south, across an alley, is the Pantages Theater. Solar access is affected by adjacent land use.

SITE CHARACTERISTICS:

The topography of the site is slightly sloping up from south to north. The site is irregular in shape and has about 536 feet on Vine Street with the depth of the site eastward and westward therefrom of 360 feet and 363.25 feet, respectively. Solar access to the south is good for roof-mounted collectors. Access to the prevailing winds from the west across Ivar Avenue is good because of the distance to, and height of, the buildings across Ivar Avenue. Access to the prevailing winds across Vine Street is fair because of the distance to, and height of, the proposed buildings across Vine Street. There will be self-blockage.

PASSIVE FEATURES:

The buildings will be concrete and frame, the former of which lends itself to passive heat storage. Although no specific passive features are contemplated at this time, Title 24 regulations that went into effect January 1, 2017, mandate many passive features and devices.

ACTIVE SOLAR SYSTEMS:

The project is not now planned for active Solar. Future retrofitting for solar could be accomplished, but the ratio of roof area to floor area is problematic. In order for the new structures to comply with the energy regulations, it is not necessary to have active solar. Water heating would require about 50 square feet of collector and 80 gallons of storage per residential unit. Photovoltaic systems are usually not cost effective unless heavily subsidized.

PASSIVE OR NATURAL HEATING AND COOLING AND ENERGY CONSERVATION REPORT

1. GENERAL CLIMATOLOGICAL DATA

Los Angeles is located in Solar Zone 5 of the state as determined by the State Energy Commission. The climate is normally pleasant and mild throughout the year. The Pacific Ocean is the primary modifying influence, but coastal mountain ranges lying along the north and east sides of the Los Angeles coastal basin act as a buffer against extremes of summer heat and winter cold occurring in desert and plateau regions in the interior. A variable balance between mild sea breezes and either hot or cold winds from the interior results in some variety in weather conditions, but temperature and humidity are usually within the limits of human comfort.

Approximate Annual Climatological Data
for the area is as follows:

Temperature (°F)	64.8	
Heating Degree Days	1245	
Cooling Degree Days	1185	
Freeze Days	<.5	
Precipitation (inches)	14.05	
Relative Humidity	4 a.m.	75%
	10 a.m.	53%
	4 p.m .	53%
	10 p.m.	72%

Approximate Annual Solar Radiation Data
for the area is as follows:

Radiation (KBtu/Ft ²)	Horizontal	549
	Direct Beam	644
% Possible Sunshine		.73
Mean Cloud Cover		.40
Fraction Extraterrestrial Radiation		.56

In summary, the area is a very good one for solar energy applications.

Wind	June	July	August	September
Mean Speed (mph)	5.7	5.4	5.3	5.3
Maximum Speed (mph)	32	21	24	27
Prevailing Direction	W	W	W	W

2. SITE ORIENTATION

The site is irregular in shape with no long axis as such. This is fair for passive gain, but as it stands, passive heating is not planned and hence no passive devices are contemplated except those that are required by the Title 24 energy analysis.

3. BUILDING CONFIGURATION AND ORIENTATION

Ideally, the buildings would have their long axis east-west. This is marginally not the case and no passive design is planned.

4. ADJACENT BUILDINGS

There is some shading of the site by adjacent buildings. Reflected solar radiation, although minimal, cannot be avoided. Access to the prevailing winds from the west across Ivar Avenue is good because of the distance to, and height of, the buildings across Ivar Avenue. Access to the prevailing winds across Vine Street is fair because of the distance to, and height of, the proposed buildings across Vine Street. There will be self-blockage.

5. EXTERIOR WALLS

The walls will be insulated (probably R-13 or more), caulked and weather-stripped in accordance with Title 24 energy regulations. Light stucco, if used, will reduce the cooling load in summer.

6. ROOF

The roofs may be suitable for solar collecting devices. Racks may be needed for proper tilt. It is likely that built-up, floor tile, or similar materials will be used for the roof.

7. WINDOWS

Some windows may require special treatment. Title 24 energy calculations will probably require dual pane Low-E windows to be used on this project.

8. ROOM USE

Passive heating and cooling (primary source) will not be utilized, so living areas have not been planned with this as a major constraint.

9. SPACE CONDITIONING

Care will be exercised in sizing and installing equipment as oversized units cost more to purchase and operate. An SEER of 14.0 or greater will be required on all new condensers. Minimum furnace AFUE will be 80% and heat pump HSPF will be 8.2. Installation of other devices such as zone damper controls is being considered. Automatic thermostats and electronically controlled ignition devices will be mandatory. Water source heat pumps or 4-pipe systems will probably be used on the project.

10. TREES AND VEGETATION

Landscape plans will consider the items below. Vegetation can provide both shade and insulation. Deciduous trees offer summer shade but allow solar energy to enter in the winter months. Trees with low foliage can shade east or west windows from a low altitude sun. Evergreens provide good shade in summer, insulate in winter and reduce heat loss at night. Outside ground planting reduces absorbed solar energy hence lowers the outdoor temperature. Building heights and lack of available planting areas will probably not allow much use of the above principles.

11. WATER CONSERVATION

Water conservation by itself is an important goal. California is highly susceptible to water shortages, so conservation of this vital resource is necessary. Conserving water conserves energy, particularly hot water uses such as sinks, dishwashers, showers, clothes washers and water heaters. Water-saving and energy-conserving appliances in compliance with Title 24 will be used. The landscape architect will be instructed to investigate low water consumption plantings and low waste watering systems.

12. FUTURE ACTIVE SOLAR SYSTEMS

The Solar Index is a number between 0 and 100 which measures the amount of heat that could be supplied on a given day by a solar system. Analyses are based on a system using 80 to 90 ft² of flat collectors serving a family of four using 80 gallons of hot water per day. This will have to be adjusted for the commercial spaces. A Solar Index (SI) of 75 means that 75% of the heat required for hot water could have been provided by the sun. The SI for Los Angeles ranges from 40 (winter worst) to 85 (summer best). There is probably not sufficient room on the roofs for the collectors. Photovoltaic systems require much more area than hot water systems so that might discourage their use, not to mention the economics of their implementation. The roofs will probably support the added weight as designed, but structural calculations would be required.

13. GREEN BUILDING CODE

All the provisions of the Green Building Code appropriate to this building at the time of permitting will be adhered to.