

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

PREPARED BY:

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TRACT NUMBER:

83088

PROJECT ADDRESS:

6460 W. Sunset Boulevard
Los Angeles, CA 90028

OWNER:

USR Real Estate Holdings LLC
500 Staple Drive
Framingham, MA 01702
508) 253-0525

39 South LLC
1415 N. Cahuenga Boulevard
Hollywood, CA 90028
323) 822-4444

EXISTING LAND USE:

Staples, combo stores/offices, and warehouse.

PROJECT DESCRIPTION:

The project is a 15-story office building with a restaurant. The project will include two levels of above grade parking, grade level parking, and three subterranean parking levels. Final building setbacks have not been determined, but they are minimal. The roof may be suitable for collectors mounted on racks for proper tilt, but the ratio of roof to floor area is relatively small.

ADJACENT LAND USE AND STRUCTURES:

To the north, about 80 feet across Sunset Boulevard, are 1 and 2-story commercial buildings. To the east, about 50 feet across Cole Place, is a 14-story office building, a 5-level parking structure, 1-story autobody facilities, and a 2-story office building. To the south, about 25 feet across an alley, is a 1-story office building. Also, to the south, about 60 feet across De Longpre Avenue, is a 2-story police station. To the west, about 60 feet across Wilcox Street, are a 9-story office building, 1 and 2-story offices, and a service facility for the police station.

SITE CHARACTERISTICS:

The topography of the site is slightly sloping down from north to south. The site has 112.66 feet of frontage on Sunset Boulevard, with the maximum depth southward therefrom of 566.09 feet (not including alley). Solar access to the south is good for roof or wall-mounted collectors. Access to prevailing winds varies from good to poor because of the height of, and distance to, the buildings to the west across Wilcox Street.

PASSIVE FEATURES:

Construction will be concrete and steel frame, the former of which will lend itself to some passive heat storage. The buildings' colors may be light, which does tend to reduce cooling loads. No formal passive features are contemplated at this time; Title 24 regulations, which went into effect January 1, 2020, mandate many passive features and devices; Title 24 determines the insulation level in exterior walls, exposed floors, and roofs.

ACTIVE SOLAR SYSTEMS:

The project is not now planned for active solar. Future retrofitting for solar hot water is unlikely because of little demand except for the restaurant. Photovoltaic systems are presently 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 rectangular with a north/south long axis. This is poor for passive solar heat gain and good for the prevailing wind, 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, for solar passive design, the proposed building on the site would have its long axis east-west. This is 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 prevailing winds varies from good to poor because of the height of, and distance to, the buildings to the west across Wilcox Street.

5. EXTERIOR WALLS

The walls will be insulated (probably a minimum of R-13), caulked and weather-stripped in accordance with Title 24 energy regulations. Light color would reduce the cooling load in summer.

6. ROOF

The roofs will be insulated in conformance with Title 24. The roofs will be suitable for collectors although the areas for collectors is small compared to the building floor area. Built-up roof or similar materials, which tend to be dark, will be used.

7. WINDOWS

Title 24 energy calculations will most likely require dual pane Low-E glass. Windows will be required to meet the infiltration requirements of the Title 24 regulations.

8. ROOM USE

Passive heating and cooling (primary source) will not be utilized.

9. SPACE CONDITIONING

Care will be exercised in sizing and installing equipment as oversized units cost more to purchase and operate. A SEER of 14.0 or greater will be required on all 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 pump, 4-pipe and VRF systems are being considered.

10. TREES AND VEGETATION

The landscape architect should consider the following items. 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 may reduce heat gain through windows in the summer. Outdoor ground planting reduces absorbed solar energy hence lowers the outdoor temperature. Clearly, the height of the building and limited areas for planting makes for limited application 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 restaurant sinks, dishwashers, 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

There is not sufficient room on the roof for all the collectors required to meet hot water or electrical demand. The roof would probably support the added weight of any collectors used (structural calculations would be required. Photovoltaic systems are not cost effective unless heavily subsidized.

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.