

74371

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

**PREPARED BY:**

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**TRACT NUMBER:**

74371

**PROJECT ADDRESS:**

6430-6440 Hollywood Blvd. and 1624-1644 Wilcox Ave.  
Los Angeles, CA 90028

**OWNER:**

6436 Hollywood Blvd. LLC  
C/o Lefrak  
40 W 57th Street, 23rd Floor  
New York, NY 10019  
(212) 708-6504

**EXISTING LAND USE:**

Office, retail and parking lot.

### **PROJECT DESCRIPTION:**

The proposed project consists of a 15-story mixed-use building comprised of 260 residential units, ground floor retail space, 2 levels of subterranean parking, and 3 levels of parking at grade and above. An existing commercial building will be preserved in place on the project site. Maximum height of the proposed project is 160 feet. Building setbacks at grade level will be minimal. The roof will be suitable for collectors mounted on racks for proper tilt. Roof area for collectors is limited because of outdoor patios.

### **ADJACENT LAND USE AND STRUCTURES:**

To the north, about 90 feet across Hollywood Boulevard, is a 5-story theatre building. To the west, approximately 50 feet across Wilcox Avenue, is a 1-story store. To the south, with a minimal setback, is a 3-story hotel. To east, with minimal setback, is a 2-story commercial building. Also to the east, with a setback of about 35 feet, is a 5-story office building. Solar access for the lower floors is somewhat affected by adjacent land use.

### **SITE CHARACTERISTICS:**

The topography of the site is slightly sloping down from north to south. The site is irregular in shape and has approximately a maximum east/west dimension parallel to Hollywood Boulevard of 282.8 feet. The maximum depth of the site southward from Hollywood Boulevard is approximately 345 feet. Solar access to the south is good for roof-mounted collectors. Access to the prevailing winds is good except for the lower stories.

### **PASSIVE FEATURES:**

The materials for construction have not been finalized except that concrete will be used. This will lend itself to some passive heat storage. The building's color may be light, which tends to reduce cooling loads. No formal passive features are contemplated at this time; Title 24 regulations, which went into effect July 1, 2014, mandate many passive features and devices; e.g. usually a minimum R-13 and R-30 insulation in walls and roofs, respectively.

### **ACTIVE SOLAR SYSTEMS:**

The project is not now planned for active solar. Future retrofitting for solar hot-water is possible. 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 <sup>2</sup> )	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 the long axis north/south. This is fair for passive 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 passive design, the proposed building on the site would have its long axis east-west. This is not the case for the residential towers 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 is good except for the lower stories.

## **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. The orientation of the residential towers are fair for passive gain and fair for prevailing winds as there is no long axis as such.

## **6. ROOF**

The roof will be insulated in conformance with Title 24. The roof will be suitable for collectors. Built-up roof or similar materials, which tend to be dark, will be used. However, a City of Los Angeles ordinance requires a cool roof irrespective of Title 24.

## **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, 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 condensers, if installed after January 1, 2015. 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 and 4-pipe systems are being considered.

## **10. TREES AND VEGETATION**

Landscape plans are currently being prepared. 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. Obviously, the height of the building and limited areas for planting allow 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 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 ft<sup>2</sup> of flat collectors serving four people using 80 gallons of hot water per day. These numbers would have to be modified somewhat due to the mixed use nature of the project occupancy. 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 not sufficient room on the roof for all the collectors required to meet the above objectives, but the roofs will probably support the added weight of those that would be used (structural calculations are required). As previously mentioned, 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.

