APPENDIX IV.J.4

Wilshire Grand Redevelopment Project, 930 Wilshire Boulevard, Los Angeles, CA,
Environmental Impact Report, Electrical Systems Report
Prepared by Glumac, May 2010

WILSHIRE GRAND REDEVELOPMENT PROJECT
930 WILSHIRE BLVD, LOS ANGELES, CA
ENVIRONMENTAL IMPACT REPORT
ELECTRICAL SYSTEMS REPORT
May, 2010

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1.0 INTRODUCTION

This report analyzes the use of electricity for the Wilshire Grand Redevelopment Project ("Project") based on the projected electrical demand and consumption attributable to the proposed project. The report describes the existing on-site electrical supplier and distribution system that currently service the Project Site. The discussion of existing on-site conditions includes an analysis of the existing annual electrical consumption and demand by land use. Based on this analysis a determination is made as to whether current electrical supplier have adequate supply to meet the proposed Project's future consumption and whether existing distribution systems can support the Project's forecasted demand.

1.1 Project Description

The Project is proposed to be developed on a 3.2-acre site that is located in the Central City (Downtown) area of the City of Los Angeles and is bounded by Francisco Street to the west, Wilshire Boulevard to the north, Figueroa Street to the east, and 7th Street to the south ("Project Site").

The Project Site is currently developed with the 16-story Wilshire Grand Hotel and Centre, which consists of approximately 912,000 square feet including 896 hotel rooms and approximately 215,000 square feet of office uses, 206,600 square feet of hotel amenity, accessory retail, and restaurant uses, and subterranean parking containing 286 parking spaces. The proposed Project would include demolition of all existing structures, including the existing subterranean parking, and redevelopment of the Project Site with a maximum of 560 hotel rooms and/or condo-hotel units, 100 residential dwelling units, 1,500,000 square feet of office, and a maximum of 275,000 square feet of project-serving amenity areas, including but not limited to, retail and restaurant uses, conference and meeting rooms, ballrooms, spa, fitness center, and other ancillary hotel, residential, and office areas ("Services").

The Project Site would be developed with an approximately 65-story structure, no more than 1,250 feet in height ("Building A"), an approximately 45-story structure, no more than 750 feet in height ("Building B"), and an approximately six-story podium structure, no more than 168 feet in height ("Podium"). The proposed Project would be constructed over a maximum of eight levels of subterranean parking containing approximately 1,900 parking spaces. The proposed Project would also include a pedestrian plaza at the corner of 7th Street and Figueroa Street. Lobbies, elevators, and amenities for the residential units may be shared or may be provided separate from the other proposed uses. The rooftop of Building A would provide a heliport, which would provide facilities for helicopter service for the project.

2.0 ENVIRONMENTAL SETTING

2.1 Regional Conditions

The Los Angeles Department of Water and Power (LADWP) supplies more than 22 million megawatt (mW) hours of electricity a year for the City's 1.4 million customers. The average resident uses about 5,000 kilowatt-hours of electricity per year. Business and industry consume about 70 percent of the electricity in Los Angeles, but residences constitute the largest number of customers. In addition to serving these consumers, the LADWP lights public streets and highways, powers the city's water system, and sells electricity to other utilities.

LADWP has a diversified energy mix –, natural gas, hydroelectric, coal, nuclear and renewable sources (solar and wind) to insulate consumers from volatile shifts in prices and fuel availability. LADWP solely owns five generating facilities located in and around Los Angeles and partially owns or has power purchase agreements with an additional five facilities in the western United States.

The following codes and regulations must be followed:

1. Los Angeles City Electrical Codes - Electrical code defines the design and construction requirements for electrical work. It is based on the California State and National Electrical Code.
2. Los Angeles City Building Code – Building code defines the design and construction requirements for buildings. It is base on the California State and International Building Codes.
3. National Fire Protection Association - NFPA is the organization the writes all the Nation building codes and standards.
4. Underwriter Laboratory - UL is an independent testing laboratory that tests the safety of equipment, fixtures and device.
5. California Code of Regulations, Title 24, Building Energy Standards - State Energy Conservation Standards for New Non-Residential Buildings (Title 24, California Administrative Code) is a set of prescriptive standards establishing mandatory maximum energy consumption levels for new buildings.

The following is a content of LADWP Power including renewable energy sources according to LADWP publication, 2009 Power Content Label[1]:

[1] http://www.ladwp.com/ladwp/cms/ladwp000536.jsp

2009 LADWP Power Content Label

Energy Resources	LADWP Power* (projected)	LADWP Green Power** (projected)	2007 CA Power Mix*** (for comparison)
Eligible Renewable**	**14%**	**100%**	**10%**
-Biomass & waste	1%	-	<1%
-Geothermal	2%	-	2%
-Small hydroelectric	5%	25%	6%
-Solar	<1%	-	<1%
-Wind	6%	75%	2%
Coal	**44%**	**-**	**32%**
Large Hydroelectric	**7%**	**-**	**24%**
Natural Gas	**26%**	**-**	**31%**
Nuclear	**9%**	**-**	**3%**
Other	**<1%**	-	**0%**
TOTAL	**100%**	**100%**	**100%**
* 100% of **LADWP Power** is specifically purchased from individual suppliers. ** 100% of **LADWP Green Power** is specifically purchased from individual suppliers. *** Percentages are estimated annually by the California Energy Commission based on the electricity sold to California consumers during the previous year. **** In accordance with Los Angeles City Council's action on 10-5-04 for File No. 03-2688 (RPS).			
For specific information about this electricity product, contact LADWP at 1-800-DIAL-DWP. For general information about the Power Content Label, contact the California Energy Commission at 1-800-555-7794 or www.energy.ca.gov/consumer.			

Per LADWP "Sustainable LADWP Evaluation & Report 2008/2009"[2]; 12 percent renewable energy was achieved by end of 2008. They are on track for 20 percent renewable energy by 2010 with a goal of 35 percent by 2020

2.2 Local Area Conditions

In the Downtown area of the City, larger loads are supplied directly from LADWP's 34.5 kilo Volt, (thousand volt), circuits that originate from Market Receiving Station P located at 560 South Wall Street, approximately 1.15 miles from the Project Site. Smaller individual loads in Downtown are usually supplied by LADWP's 4.8 kilo Volt distribution system. Existing 4.8 kilo Volt circuits to this area originate from Distribution Station 42, located at 432 South Grand Avenue, approximately less than a mile from the Project Site. The higher voltage has higher electromotive force for more energy distribution.

[2] http://www.ladwp.com/ladwp/cms/ladwp012640.pdf

LADWP presently operates both 34.5 kilo Volt and 4.8 kilo Volt underground circuits in Wilshire Boulevard and 4.8 kilo Volt underground circuits in Figueroa Street.

A receiving station is a substation consisting of 500, 230 or 130 kilo Volt to 34.5 kilo Volt transformers, primary switches, capacitor banks and distribution busing. A distribution station consists of 34.5 kilo Volt to 4.8 kilo Volt transformers, primary switches, capacitor banks and distribution busing. The difference between the two is in incoming voltage and size of transformers, with the receiving station being larger. The receiving and distribution stations are LADWP facilities that do not generate power.

2.3 Site Conditions

Currently, there is an existing LADWP on-site transformer substation, also known as Customer Station 152, located at the southwest corner of the Project Site that serves the existing Wilshire Grand Hotel. The existing LADPW Customer Station 152 will be demolished and replaced as part of the proposed Project. It is currently fed from the underground 4.8- kilo Volt line which runs along Figueroa Street near 7th Street.

The existing service is limited by its three incoming 4.8 kilo Volt lines to two 1000 kilo Volt-ampere, 120/208 volt transformers, two 1000 kilo Volt-ampere, 480 volts transformers, one 75 kilo Volt-ampere, 120/240 emergency transformer and one 4.8 kilo Volt service, (750 kilo Volt-ampere), for a total capacity of 4,825 kilo Volt-ampere. Kilo-Volt-ampere is the unit of measurement for electrical power.

The existing Wilshire Grand Hotel has a maximum demand load of 3,797 kilo Watts and uses 16,610,150 kilo Watts-hour per year. This information was obtained from LADWP utility bills for the existing Wilshire Grand Hotel over a one year period from June of 2008 to June 2009. The maximum demand load is the sum of the highest demand loads over the one year period for the 35 existing LADWP electrical meters on the existing hotel. The annual power usage is the sum of the kilo Watts-hour for a one year period for the 35 existing LADWP electrical meters. Kilo-Watt-hours is the unit of measurement for is electrical energy consumption.

3.0 METHODOLOGY

3.1 Proposed Electrical Consumption:

1. South Coast Air Quality Management District, (SCAQMD) Proposed Electrical Consumption. The electrical usage rates are published in the SCAQMD California Environmental Quality Act (CEQA) Handbook, Appendix 9, Tables A9-11A, 1993 for determining proposed electrical consumption.
2. An electrical energy consumption rate was developed using the California Energy Commission's 2003 Residential Appliance Saturation Survey (RASS) data base, which incorporated the 2008 Title 24 standard or a 15 percent reduction from the 2005 Title 24 Standard in the Climate Change Technical

Report[3]. The Project electrical demand was based on the greater electrical demand rate between the RASS and the SCAQD CEQ tables.

3. An electrical energy consumption rate was developed using the California Commercial End-Use Survey (CEUS) data base, which incorporated the 2008 Title 24 standard or a 15 percent reduction from the 2005 Title 24 Standard in the Climate Change Technical Report[3]. The Project electrical consumption was based on the greater electrical consumption rate between the CEUS and the SCAQD CEQ tables.
4. The signage electrical consumption, (22.58 W/SF), was provided by the signage manufacture; A2aMEDIA.

3.2 Proposed Electric Design Load

The estimated design load for the proposed Project is based on building square footage and the nature of the building use. The factors involved used for calculating this estimate consist of:

1. California Code of Regulations, Title 24, Energy Conservation Standards allowed lighting power
2. National Electrical Code demand factors
3. American Society of Heating, Refrigeration and Air-Conditioning Engineers, (ASHRAE) standards for HVAC
4. Engineering judgment based on historical data for receptacle, number of elevators, fire pumps, and other equipment loads including energy design saving features.
5. The signage electrical demand load, (7.551 W/SF), was provided by the signage manufacture; A2aMEDIA.

The total estimated electrical design loads for the proposed Project are used for sizing equipment such as transformers, generators, etc. in accordance with the National Electrical Code. The maximum electrical design load is the estimated amount of power used on the proposed Project at one point in time.

3.3 LADWP Electrical Demand: LADWP determines the actual demand load for the proposed Project based on the total estimated electrical design load. It is a fraction of the connected load and is calculated based upon LADWP's historical electrical loads for similar size and types buildings which includes reasonable margin of excess capacity during peak load times, (Monday through Friday 1PM to 5PM). LADWP determines the appropriate demand factor to be applied to the connected load for sizing their equipment and infrastructure.

3.4 Existing Electrical Demand: The net increase in electrical demand load is the difference between the existing maximum electrical demand load and the estimated new electrical demand load. In order to determine the existing electrical demand load which is recorded in kilo Watts, the electrical demand will need to be converted to kilo Volt-Ampere by dividing kilo Watts by a power factor,

[3] Environ May 2010 Climate Change Technical Report

(PF) of 85 percent (3,797 kilo Watts ÷ .85 PF = 4457 kilo Volt-Ampere). This conversion transforms useable power to apparent power for sizing equipment.

4.0 THRESHOLDS OF SIGNIFICANCE

The City of Los Angeles CEQA Thresholds Guide (page M.4-3) states that a determination of significance relative to energy consumption shall be made on a case-by-case basis, considering the following factors:

1. The extent to which the project would require new (off-site) energy supply facilities and distribution infrastructure, or capacity enhancing alterations to existing facilities;
2. Whether and when the needed infrastructure was anticipated by adopted plans; and
3. The degree to which the Project design and/or operations incorporate energy conservation measures, particularly those that go beyond City requirements.

Based on all of these factors, the Project would have a significant impact if:

1. The Project would result in an increase in demand for electricity that exceeds available supply or distribution infrastructure capabilities.
2. The design of the Project fails to incorporate energy conservation measures under California Code of Regulations, Title 24.

5.0 PROJECT SUPPLY AND DEMAND

The analysis of utility impacts focuses upon the relationship between supply and demand. In general, supply involves both the availability of the resource and the ability to convey the resource. The demand involves the net incremental demand generated by the proposed Project.

Electricity is a consumptive utility, where a resource is consumed. In the case of the electricity, the resource is man-made, rather than a natural resource. Since there are a number of different technologies available to generate electricity, generating capacity is not typically an issue so long as the additional demand is within the planning parameters. Conveyance (via transmission lines) of electricity is typically responsive to market demands. The infrastructure is commonly already in place within a built environment. The capacity of the existing electrical infrastructure system is typically a function of the adequacy of the system components to handle the distribution.

5.1 Project Electrical Consumption:

The proposed Project electrical energy consumption is based on type of usage and square footage and is estimated as 46,950,520 kWh/yr. It is the electrical energy used which the LADWP must supply the Project. It is based on the worse case scenario for the two calculation methodologies discussed in Section 4.0.

Additional electrical consumption on the system above the standard building loads is signage. Large areas of signage that is built into the building facade will is a significant load on the electrical system.

Detail of the breakdown is as follows:

Table 5.1A - Proposed Project Consumption Load

LAND USE	PROPOSED BUILDING AREA (SF or units)	SCAQMD CEQA ELECTRICAL USAGE RATE*	RASS/CEUS adjusted ELECTRICAL USAGE RATE**	ELECTRICAL ENERGY CONSUMPTION ***** (kWh/yr)
Office Tower (sf)	1,500,000 sf	12.95 kWh/sf-yr	14.55 kWh/sf-yr	21,825,000
Hotel Rooms******	560 units/ 358,960 sf	9.95 kWh/sf-yr	8.67 kWh/sf-yr	3,571,650
Residential Dwelling Units	100 units	5626.5 kWh/unit-yr	3115 kWh/unit-yr	562,650
Retail/Restaurant (sf)	50,000 sf	47.45 kWh/sf-yr	47.32 kWh/sf-yr	2,372,500
Meeting Rooms/Ball Rooms (sf)	55,000 sf	9.95 kWh/sf-yr	12.34 kWh/sf-yr	678,700
Fitness Facility/SPA (sf)	20,000 sf	13.55 kWh/sf-yr	23.29 kWh/sf-yr	465,800
Ancillary Hotel Areas (sf)	150,000 sf	10.5 kWh/sf-yr	12.34 kWh/sf-yr	1,851,000
Parking area (1900 spaces)	617,500 sf	4.22 kWh/sf-yr***	4.58 kWh/sf-yr	2,828,150
Building Signage	244,322 sf	52.366 kWh/sf-yr ****	52.366 kWh/sf-yr****	12,794,170
Total				**46,950,520**

***** SCAQMD CEQA Handbook Usage Rate Appendix 9 Table 9-11A 1993

**Usage rated established for "Climate Change Technical Report" by ENVIRON based on RASS and CEUS

******* Consumption for parking is base on Title 24 and actual usage. (3 Hrs/day for Elevators and Fans)

**** based on 19 hrs per day, 365 days/yr and average energy consumption per manufactures specifications of 7.551 w/sf.

*****use largest consumption rate of two methodologies (SCAQMD or RASS/CEUS) for most conservative calculation.

****** Assumes average hotel room of 641 square feet.

SF: is square feet

kWh/sf-yr: the kilo watt hours per square foot per year of electrical energy consumption.

The net incremental increase in electrical energy consumption for the proposed project is 30,340,370 kW-hr/yr as shown in the table below:

Table 5.1B – Load Summary of Electrical Energy Consumption

Energy consumed at the Existing Wilshire Grand Hotel	Estimated energy consumption for proposed Project	Net Increase in energy consumption
16,610,150 kW—hr/yr	46,950,520 kW-hr/yr	30,340,370 kW-hr/yr

5.2 Project Electrical Demand

The proposed Project electrical power demand load is based on type of usage and square footage and is estimated as 14,350 kVA. It is the capacity which the LADWP must size it distribution infrastructure to supply the Project. Detail of the breakdown is as follows:

Table 5.2 Proposed Project Demand Load

LAND USE	PROPOSED BUILDING AREA (SF or units)	DESIGN LOAD (kVA) *	DEMAND FACTOR **	DEMAND LOAD (kVA) ***
Office Tower (sf)	1,500,000 sf	20,140	40%	8,060
Hotel Rooms	560 units	3,720	40%	1,490
Residential Dwelling Units	100 units	800	70%	560
Retail/Restaurant (sf)	50,000 sf	900	50%	450
Meeting Rooms/Ball Rooms (sf)	55,000 sf	700	40%	280
Fitness Facility/SPA (sf)	20,000 sf	250	40%	100
Ancillary Hotel Areas (sf)	150,000 sf	2,420	40%	970
Parking area (617,500 sf)	1900 spaces	1,200	50%	600
Signage ****	244,322 sf	5,520	33.4%	1,840
Total		**35,650**		**14,350**

***** The design load is established per the Methodology paragraph 3.2.
****** Demand factor is the percentage of the connected load that the LADWP uses to size there equipment per the Methodology paragraph 3.3
******* Design load multiplied by demand factor gives us demand load.
******** 22.58 w/sf design load and 7.551 w/sf demand load were provided by the sign manufacturer.
SF is square feet
kVA or kilo Volt Ampere is apparent power for sizing equipment

The net incremental increase load for the proposed Project is 9,883 kVA as shown in the table below:

Load Summary of Electrical Demand Load		
Existing Loads	Estimated new demand loads	Net Increase Loads
4,467 kVA	14,350 kVA	9,883 kVA

5.3 Availability of Supply

LADWP will supply the proposed Project from the existing 34.5-kV system. Per an Email memo from Mark Holland of LADWP; LADWP can supply the proposed Project's electrical demand with no improvements to the existing LADWP electrical distribution systems[4]. LADWP will also be able to supply the proposed Project with temporary construction power.

As an alternative power supply a Cogeneration system has been proposed. Two mega-watt natural gas powered generator would be used to provide electrical power supply and waste heat for absorption chillers and hot water. The system would reduction the electrical demand load on the utility system by about three meg-watts, (assuming the generators are 75% loaded).

6.0 PROJECT DESIGN FEATURES

1. The proposed Project would have its own services from LADWP. Electrical conduits, wiring and associated infrastructure would be brought from existing LADWP electrical lines located in the surrounding streets adjacent to the Project Site. There would be a common LADWP Customer Station housing at least three transformers for the proposed office (Building A) and two transformers for the proposed hotel (Building B). The proposed Project's LADWP Customer Station will consist of stationary electrical equipment including primary switches and over-current protection; capacitors and transformers used to reduce the voltage of incoming supply lines to a lower level suitable for distribution within the Project site. The Customer Station is a facility that does not generate electricity.

2. The Applicant or its successor will install energy monitoring dashboards to provide real time historical feedback to residents on their home energy consumption (residential condo units only).

3. The Applicant or its successor will provide education on energy efficiency.

4. The Applicant or its successor shall design the building envelope, heating, ventilation, and air-conditioning, lighting, and other energy systems to maximize energy performance to comply with the Title 24 (2008) requirements and exceed the Title 24 (2005) requirements by at least 15 percent by employing energy saving

[4] See Appendix A for copy of Email from Mark Holland of LADWP

technologies such as automatic and day-lighting controls and zoning; cool roofs or high reflectance, high emittance roof surfaces in all low-slope applications; building commissioning for electrical and mechanical equipment; Energy efficiency heating and cooling systems, transformers, and indoor and outdoor lighting; Energy Star appliances; energy efficient pumps and motors for pools and spas; and other building envelope components such as glazing, insulation, and energy efficient windows.

5. LEED Certification: The Applicant or its successor shall pursue Leadership in Energy and Environmental Design (LEED) Silver rating certification for the hotel and office. One of the possible energy saving technologies that the proposed Project is considering are on-site generation systems such as cogeneration, fuel cell energy, adsorption chiller, geothermal, and solar energy. Therefore, the proposed Project has the potential to exceed the Title 24 (2005) requirements by more than 15 percent. The proposed Project is also considering Enhanced Commissioning as well as Measure and Verification processes to verify that the building's energy related systems are installed, calibrated, and performed.

7.0 CONSTRUCTION IMPACTS

Construction of the proposed Project is anticipated to occur over an approximately 54-month period commencing as early as the year 2011. Based on the information provided by the Turner Construction, the estimated electrical temporary power load during the construction will be up to 7,000 Amps at 480Y/277 Volts, 3 phase, 4 wire.

The proposed Project will require a new LADWP customer station. Conduit banks connecting to existing LADWP electrical distribution system at a manhole located in Wilshire Boulevard for connection to the proposed LADWP customer station. Construction of the new electrical distribution infrastructure will be coordinated with other infrastructure to minimize disruption.

If Francisco Street is vacated, subterranean parking will be extended under Francisco Street to the new property line and the existing utilities in the street will be relocated. Currently there are storm drains, communication and power lines located in the Francisco streets which will require relocation.

8.0 LAND USE EQUIVALENCY PROGRAM

Under the Land Use Equivalency Program, the proposed mix of land uses would be able to be modified within the development envelope defined by the approved entitlements. Land uses identified in Section II (Project Description) could be exchanged to allow for the development of substitute land uses based on afternoon peak hour trip generation rates, as shown on Table II-2 (Land Use Equivalency Program). These exchanges could result in different electrical demand and energy consumption that indicated for the Project. However, as a regulated utility, LADWP is required to serve the Project. As such, implementation of the Land Use Equivalency Program would not result in additional significant impacts related to electrical power service.

9.0 DESIGN FLEXIBILITY PROGRAM

The design of the Project as a conceptual plan allows for flexibility in the finalized building design within a determined set of parameters. Since the Project Site conditions would not change from what was discussed previously, and the Project Site would be constructed within the same parameters as analyzed under the Project, the Design Flexibility Program would have no effect regarding electrical supply and infrastructure.

10.0 PROJECT ALTERNATIVES

10.1 Alternative 1 – No Project Alternative

In this alternative, the existing Wilshire Grand Hotel will continue to operate. Therefore, there is no change to the electrical demand or consumption from the existing condition.

10.2 Alternative 2 – Reduced Density Alternative

The electrical demand loads for this alternative which would include a maximum of 560 hotel rooms, and/or 100 residential dwelling units, 1,250,000 sf of office and 210,000 sf of amenity area and approximately 1,566 parking spaces, is 11,306 kVA. The electrical energy consumption for this alternative is 32,541,970 kWh/yr.

Table 10.2A – Reduced Density Alternative Electrical Demand Load

LAND USE	PROPOSED BUILDING AREA (SF or units)	DESIGN LOAD (kVA) *	DEMAND FACTOR **	DEMAND LOAD (kVA) ***
Office Tower (sf)	1,250,000 sf	17,090	40%	6,836
Hotel Rooms	560 units	3,720	40%	1,490
Residential Dwelling Units	100 units	800	70%	560
Retail/Restaurant (sf)	35,000 sf	630	50%	315
Meeting Rooms/Ball Rooms (sf)	40,000 sf	509	40%	204
Fitness Facility/SPA (sf)	17,000 sf	213	40%	85
Ancillary Hotel Areas (sf)	118,000 sf	1,904	40%	761
Parking area (508,950 sf)	1566 spaces	989	50%	495
Signage ****	74,147 sf	1,674	-	560
Total		**27,529**		**11,306**

***** The design load is established per the Methodology paragraph 3.2.
****** Demand factor is the percentage of the connected load that the LADWP uses to size there equipment per the Methodology paragraph 3.3
******* Design load multiplied by demand factor gives us demand load.
******** 22.58 w/sf design load and 7.551 w/sf demand load were provided by the sign manufacturer.

SF is square feet SF is square feet
kVA or kilo Volt Ampere is apparent power for sizing equipment

Table 10.2B – Reduced Density Alternative Electrical Consumption

LAND USE	PROPOSED BUILDING AREA (SF or units)	SCAQMD CEQA ELECTRICAL USAGE RATE*	RASS/CEUS adjusted ELECTRICAL USAGE RATE**	ELECTRICAL ENERGY CONSUMPTION ***** (kWh/yr)
Office Tower (sf)	1,250,000 sf	12.95 kWh/sf-yr	14.55 kWh/sf-yr	18,187,500
Hotel Rooms******	560 units/ 358,960 sf	9.95 kWh/sf-yr	8.67 kWh/sf-yr	3,571,650
Residential Dwelling Units	100 units	5626.5 kWh/unit-yr	3526 kWh/unit-yr	562,650
Retail/Restaurant (sf)	35,000 sf	47.45 kWh/sf-yr	47.32 kWh/sf-yr	1,660,750
Meeting Rooms/Ball Rooms (sf)	40,000 sf	9.95 kWh/sf-yr	12.34 kWh/sf-yr	493,600
Fitness Facility/SPA (sf)	17,000 sf	13.55 kWh/sf-yr	23.29 kWh/sf-yr	395,930
Ancillary Hotel Areas (sf)	118,000 sf	10.5 kWh/sf-yr	12.34 kWh/sf-yr	1,456,120
Parking area (1566 spaces)	508,950 sf	4.22 kWh/sf-yr***	4.58 kWh/sf-yr	2,330,990
Building Signage	74,147 sf	52.366 kWh/sf-yr ****	52.366 kWh/sf-yr****	3,882,780
Total				**32,541,970**

***** SCAQMD CEQA Handbook Usage Rate Appendix 9 Table 9-11A 1993
**Usage rated established for "Climate Change Technical Report" by ENVIRON base on RASS and CEUS
******* Consumption for parking is base on Title 24 and actual usage. (3 Hrs/day for Elevators and Fans)
**** based on 19 hrs per day, 365 days/yr and average energy consumption per manufactures specifications of 7.551 w/sf.
*****use largest consumption rate of two methodologies (SCAQMD or RASS/CEUS) for most conservative calculation.
****** Assumes average hotel room of 641 square feet.

SF is square feet
kWh/sf-yr is the kilo watt hours per square foot per year of electrical energy consumption.

10.3 Alternative 3 – Phased Construction Alternative

In this alternative, the electrical loads and consumption would be the same as the proposed Project.

10.4 Alternative 4 – Office-only Alternative

The electrical demand loads for this alternative which would consist of 1,750,000 sf of offices, 90,000 sf of amenities retail and restaurant and approximately 1,384 parking spaces, is 11,227 kVA. The electrical energy consumption for this alternative is 33,700,480 kWh/yr.

Table 10.4A – Office Only Alternative Electrical Demand Load

LAND USE	PROPOSED BUILDING AREA (SF or units)	DESIGN LOAD (kVA) *	DEMAND FACTOR **	DEMAND LOAD (kVA) ***
Office Tower (sf)	1,750,000 sf	23,190	40%	9,276
Retail/Restaurant (sf)	75,000 sf	1,350	50%	675
Fitness Facility/SPA (sf)	15,000 sf	188	40%	75
Parking area (449,800 sf)	1384 spaces	1,748	50%	874
Signage ****	43,345 sf	979	-	327
Total		**27,455**		**11,227**

***** The design load is established per the Methodology paragraph 3.2.
****** Demand factor is the percentage of the connected load that the LADWP uses to size there equipment per the Methodology paragraph 3.3
******* Design load multiplied by demand factor gives us demand load.
******** 22.58 w/sf design load and 7.551 w/sf demand load were provided by the sign manufacturer.
SF is square feet
SF is square feet
kVA or kilo Volt Ampere is apparent power for sizing equipment

Table 10.4B – Office Only Alternative Electrical Consumptions

LAND USE	PROPOSED BUILDING AREA (SF or units)	SCAQMD CEQA ELECTRICAL USAGE RATE*	RASS/CEUS adjusted ELECTRICAL USAGE RATE**	ELECTRICAL ENERGY CONSUMPTION ***** (kWh/yr)
Office Tower (sf)	1,750,000 sf	12.95 kWh/sf-yr	14.55 kWh/sf-yr	25,462,500
Retail/Restaurant (sf)	75,000 sf	47.45 kWh/sf-yr	47.32 kWh/sf-yr	3,558,750
Fitness Facility/SPA (sf)	15,000 sf	13.55 kWh/sf-yr	23.29 kWh/sf-yr	349,350
Parking area (1384 spaces)	449,800 sf	4.22 kWh/sf-yr***	4.58 kWh/sf-yr	2,060,080
Building Signage	43,345 sf	52.366 kWh/sf-yr ****	52.366 kWh/sf-yr****	2.269,800
Total				**33,700,480**

***** SCAQMD CEQA Handbook Usage Rate Appendix 9 Table 9-11A 1993
**Usage rated established for "Climate Change Technical Report" by ENVIRON base on RASS and CEUS
******* Consumption for parking is base on Title 24 and actual usage. (3 Hrs/day for Elevators and Fans)
**** based on 19 hrs per day, 365 days/yr and average energy consumption per manufactures specifications of 7.551 w/sf.
*****use largest consumption rate of two methodologies (SCAQMD or RASS/CEUS) for most conservative calculation.
SF is square feet
kWh/sf-yr is the kilo watt hours per square foot per year of electrical energy consumption.

10.5 Alternative 5 – Residential-only Alternative

The electrical demand loads for this alternative, which would include 1,100 residential units and 170,000 pedestrian-oriented retail and 1,433 parking spaces, is 8,200 kVA. The electrical energy consumption for this alternative is 15,817,700 kWh/yr.

Table 10.5A – Residential Only Alternative Electrical Demand

LAND USE	PROPOSED BUILDING AREA (SF or units)	DESIGN LOAD (kVA) *	DEMAND FACTOR **	DEMAND LOAD (kVA) ***
Residential Dwelling Units	1100 units	8,855	70%	6,199
Retail/Restaurant (sf)	100,000 sf	1,800	50%	900
Fitness Facility/SPA (sf)	25,000 sf	313	40%	125
Amenities (sf)	45,000 sf	726	40%	290
Parking area (1433 spaces)	465,725	905	50%	453
Signage ****	30,802	696	-	233
Total		**13,295**		**8,200**

***** The design load is established per the Methodology paragraph 3.2.
****** Demand factor is the percentage of the connected load that the LADWP uses to size there equipment per the Methodology paragraph 3.3
******* Design load multiplied by demand factor gives us demand load.
******** 22.58 w/sf design load and 7.551 w/sf demand load were provided by the sign manufacturer.
SF is square feet SF is square feet
kVA or kilo Volt Ampere is apparent power for sizing equipment

Table 10.5B – Residential Only Alternative Electrical Consumption

LAND USE	PROPOSED BUILDING AREA (SF or units)	SCAQMD CEQA ELECTRICAL USAGE RATE*	RASS/CEUS adjusted ELECTRICAL USAGE RATE**	ELECTRICAL ENERGY CONSUMPTION ***** (kWh/yr)
Residential Dwelling Units	1100 units	5626.5 kWh/unit-yr	3526 kWh/unit-yr	6,189,150
Retail/Restaurant (sf)	100,000 sf	47.45 kWh/sf-yr	47.32 kWh/sf-yr	4,745,000
Fitness Facility/SPA (sf)	25,000 sf	13.55 kWh/sf-yr	23.29 kWh/sf-yr	582,250
Amenities (sf)	45,000 sf	10.5 kWh/sf-yr	12.34 kWh/sf-yr	555,300
Parking area (1433 spaces)	465,725 sf	4.22 kWh/sf-yr***	4.58 kWh/sf-yr	2,133,020
Building Signage	30,802 sf	52.366 kWh/sf-yr ****	52.366 kWh/sf-yr****	1,612,980
Total				**15,817,700**

***** SCAQMD CEQA Handbook Usage Rate Appendix 9 Table 9-11A 1993

**Usage rated established for "Climate Change Technical Report" by ENVIRON base on RASS and CEUS

******* Consumption for parking is base on Title 24 and actual usage. (3 Hrs/day for Elevators and Fans)

**** based on 19 hrs per day, 365 days/yr and average energy consumption per manufactures specifications of 7.551 w/sf.

*****use largest consumption rate of two methodologies (SCAQMD or RASS/CEUS) for most conservative calculation.

SF is square feet

kWh/sf-yr is the kilo watt hours per square foot per year of electrical energy consumption.

10.6 Alternative 6 – Reduced Height Alternative

The electrical demand for this alternative, which would include 560 hotel rooms, and/or condominium hotel units, 100 residential units, 1.5 million square feet of office uses and 275,000 square feet of amenity retail would be the same as for the proposed Project.

10.7 Alternative 7 – Zoning Compliant Alternative

The electrical demand loads for this alternative which would include a maximum of 350 hotel rooms, and/or 50 condo/hotel units, 350,000 sf of office and 132,500 sf of amenity area and approximately 917 parking spaces, is 3,633 kVA. The electrical energy consumption for this alternative is 16,519,620 kWh/yr.

Table 10.7A – Zoning Compliant Alternative Electrical Demand

LAND USE	PROPOSED BUILDING AREA (SF or units)	DESIGN LOAD (kVA) *	DEMAND FACTOR **	DEMAND LOAD (kVA) ***
Office Tower (sf)	350,000 sf	1,720	40%	687
Hotel Rooms (230,000 sf)	350 units	2,325	40%	930
Residential Dwelling Units	50 units	400	70%	280
Retail/Restaurant (sf)	50,000 sf	900	50%	450
Meeting Rooms/Ball Rooms (sf)	50,000 sf	636	40%	255
Fitness Facility/SPA (sf)	20,000 sf	250	40%	100
Amenities (sf)	12,500 sf	202	40%	81
Parking area (917 spaces)	298,025	579	50%	290
Signage ****	74,147	1,674	-	560
Total		**8,686**		**3,633**

***** The design load is established per the Methodology paragraph 3.2.
****** Demand factor is the percentage of the connected load that the LADWP uses to size there equipment per the Methodology paragraph 3.3
******* Design load multiplied by demand factor gives us demand load.
******** 22.58 w/sf design load and 7.551 w/sf demand load were provided by the sign manufacturer.
SF is square feet SF is square feet
kVA or kilo Volt Ampere is apparent power for sizing equipment

Table 10.7B – Zoning Compliant Alternative Electrical Consumption

LAND USE	PROPOSED BUILDING AREA (SF or units)	SCAQMD CEQA ELECTRICAL USAGE RATE*	RASS/CEUS adjusted ELECTRICAL USAGE RATE**	ELECTRICAL ENERGY CONSUMPTION ***** (kWh/yr)
Office Tower (sf)	350,000 sf	12.95 kWh/sf-yr	14.55 kWh/sf-yr	5,092,500
Hotel Rooms	350 units/ 230,000 sf	9.95 kWh/sf-yr	8.67 kWh/sf-yr	2,288,500
Residential Dwelling Units	50 units	5626.5 kWh/unit-yr	3526 kWh/unit-yr	281,330
Retail/Restaurant (sf)	50,000 sf	47.45 kWh/sf-yr	47.32 kWh/sf-yr	2,372,500
Meeting Rooms/Ball Rooms (sf)	50,000 sf	9.95 kWh/sf-yr	12.34 kWh/sf-yr	617,000
Fitness Facility/SPA (sf)	20,000 sf	13.55 kWh/sf-yr	23.29 kWh/sf-yr	465,800
Amenities (sf)	12,500 sf	10.5 kWh/sf-yr	12.34 kWh/sf-yr	154,250
Parking area (917 spaces)	298,025 sf	4.22 kWh/sf-yr***	4.58 kWh/sf-yr	1,364,960
Building Signage	74,147	52.366 kWh/sf-yr ****	52.366 kWh/sf-yr****	3,882,780
Total				**16,519,620**

***** SCAQMD CEQA Handbook Usage Rate Appendix 9 Table 9-11A 1993

**Usage rated established for "Climate Change Technical Report" by ENVIRON base on RASS and CEUS

******* Consumption for parking is base on Title 24 and actual usage. (3 Hrs/day for Elevators and Fans)

**** based on 19 hrs per day, 365 days/yr and average energy consumption per manufactures specifications of 7.551 w/sf.

*****use largest consumption rate of two methodologies (SCAQMD or RASS/CEUS) for most conservative calculation.

SF is square feet

kWh/sf-yr is the kilo watt hours per square foot per year of electrical energy consumption.

10.8 Alternative 8 – Reduced Signage Alternative

The electrical demand for this alternative, which would include 560 hotel rooms, and/or condominium hotel units, 100 residential units, 1.5 million square feet of office uses, 275,000 square feet of amenity retail and approximately 1900 parking spaces with reduced signage is 14,410 kVA. The electrical energy consumption for this alternative is 46,565,770 kWh/yr.

Table 10.8A - Reduced Signage Alternative Demand Load

LAND USE	PROPOSED BUILDING AREA (SF or units)	DESIGN LOAD (kVA) *	DEMAND FACTOR **	DEMAND LOAD (kVA) ***
Office Tower (sf)	1,500,000 sf	20,140	40%	8,060
Hotel Rooms	560 units	4,000	40%	1,600
Residential Dwelling Units	100 units	800	70%	560
Retail/Restaurant (sf)	50,000 sf	900	50%	450
Meeting Rooms/Ball Rooms (sf)	55,000 sf	700	40%	280
Fitness Facility/SPA (sf)	20,000 sf	250	40%	100
Ancillary Hotel Areas (sf)	150,000 sf	2,420	40%	970
Parking area (617,500 sf)	1900 spaces	1,200	50%	600
Signage ****	236,992 sf	5,351	-	1,790
Total		**35,761**		**14,410**

***** The design load is established per the Methodology paragraph 3.2.
****** Demand factor is the percentage of the connected load that the LADWP uses to size there equipment per the Methodology paragraph 3.3
******* Design load multiplied by demand factor gives us demand load.
******** 22.58 w/sf design load and 7.551 w/sf demand load were provided by the sign manufacturer.
SF is square feet
kVA or kilo Volt Ampere is apparent power for sizing equipment

Table 10.8B – Reduced Signage Alternative Electrical Consumption

LAND USE	PROPOSED BUILDING AREA (SF or units)	SCAQMD CEQA ELECTRICAL USAGE RATE*	RASS/CEUS adjusted ELECTRICAL USAGE RATE**	ELECTRICAL ENERGY CONSUMPTION ***** (kWh/yr)
Office Tower (sf)	1,500,000 sf	12.95 kWh/sf-yr	14.55 kWh/sf-yr	21,825,000
Hotel Rooms	560 units/ 358,960 sf	9.95 kWh/sf-yr	8.67 kWh/sf-yr	3,571,650
Residential Dwelling Units	100 units	5626.5 kWh/unit-yr	3526 kWh/unit-yr	562,650
Retail/Restaurant (sf)	50,000 sf	47.45 kWh/sf-yr	47.32 kWh/sf-yr	2,372,500
Meeting Rooms/Ball Rooms (sf)	55,000 sf	9.95 kWh/sf-yr	12.34 kWh/sf-yr	678,700
Fitness Facility/SPA (sf)	20,000 sf	13.55 kWh/sf-yr	23.29 kWh/sf-yr	465,800
Ancillary Hotel Areas (sf)	150,000 sf	10.5 kWh/sf-yr	12.34 kWh/sf-yr	1,851,000
Parking area (1900 spaces)	617,500 sf	4.22 kWh/sf-yr***	4.58 kWh/sf-yr	2,828,150
Building Signage	236,992 sf	52.366 kWh/sf-yr ****	52.366 kWh/sf-yr****	12,410,320
Total				**46,565,770**

***** SCAQMD CEQA Handbook Usage Rate Appendix 9 Table 9-11A 1993

**Usage rated established for "Climate Change Technical Report" by ENVIRON based on RASS and CEUS

******* Consumption for parking is base on Title 24 and actual usage. (3 Hrs/day for Elevators and Fans)

**** based on 19 hrs per day, 365 days/yr and average energy consumption per manufactures specifications of 7.551 w/sf.

*****use largest consumption rate of two methodologies (SCAQMD or RASS/CEUS) for most conservative calculation.

SF is square feet

kWh/sf-yr is the kilo watt hours per square foot per year of electrical energy consumption.

10.9 Alternative 9 - Zoning Compliant Signage Alternative

The electrical demand for this alternative, which would include 560 hotel rooms, and/or condominium hotel units, 100 residential units, 1.5 million square feet of office uses, 275,000 square feet of amenity retail and approximately 1900 parking spaces with no signage is 12510 kVA. The electrical energy consumption for this alternative is 34,155,450 kWh/yr.

Table 10.9A - Reduced Signage Alternative Demand Load

LAND USE	PROPOSED BUILDING AREA (SF or units)	DESIGN LOAD (kVA) *	DEMAND FACTOR **	DEMAND LOAD (kVA) ***
Office Tower (sf)	1,500,000 sf	20,140	40%	8,060
Hotel Rooms	560 units	3,720	40%	1,490
Residential Dwelling Units	100 units	800	70%	560
Retail/Restaurant (sf)	50,000 sf	900	50%	450
Meeting Rooms/Ball Rooms (sf)	55,000 sf	700	40%	280
Fitness Facility/SPA (sf)	20,000 sf	250	40%	100
Ancillary Hotel Areas (sf)	150,000 sf	2,420	40%	970
Parking area (617,500 sf)	1900 spaces	1,200	50%	600
Total		**30,130**		**12,510**

***** The design load is established per the Methodology paragraph 3.2.
****** Demand factor is the percentage of the connected load that the LADWP uses to size there equipment per the Methodology paragraph 3.3
******* Design load multiplied by demand factor gives us demand load.
******** 22.58 w/sf design load and 7.551 w/sf demand load were provided by the sign manufacturer.
SF is square feet
kVA or kilo Volt Ampere is apparent power for sizing equipment

Table 10.9B – Reduced Signage Alternative Electrical Consumption

LAND USE	PROPOSED BUILDING AREA (SF or units)	SCAQMD CEQA ELECTRICAL USAGE RATE*	RASS/CEUS adjusted ELECTRICAL USAGE RATE**	ELECTRICAL ENERGY CONSUMPTION ***** (kWh/yr)
Office Tower (sf)	1,500,000 sf	12.95 kWh/sf-yr	14.55 kWh/sf-yr	21,825,000
Hotel Rooms	560 units/ 358,960 sf	9.95 kWh/sf-yr	8.67 kWh/sf-yr	3,571,650
Residential Dwelling Units	100 units	5626.5 kWh/unit-yr	3526 kWh/unit-yr	562,650
Retail/Restaurant (sf)	50,000 sf	47.45 kWh/sf-yr	47.32 kWh/sf-yr	2,372,500
Meeting Rooms/Ball Rooms (sf)	55,000 sf	9.95 kWh/sf-yr	12.34 kWh/sf-yr	678,700
Fitness Facility/SPA (sf)	20,000 sf	13.55 kWh/sf-yr	23.29 kWh/sf-yr	465,800
Ancillary Hotel Areas (sf)	150,000 sf	10.5 kWh/sf-yr	12.34 kWh/sf-yr	1,851,000
Parking area (1900 spaces)	617,500 sf	4.22 kWh/sf-yr***	4.58 kWh/sf-yr	2,828,150
Total				**34,155,450**

***** SCAQMD CEQA Handbook Usage Rate Appendix 9 Table 9-11A 1993

**Usage rated established for "Climate Change Technical Report" by ENVIRON based on RASS and CEUS

******* Consumption for parking is base on Title 24 and actual usage. (3 Hrs/day for Elevators and Fans)

**** based on 19 hrs per day, 365 days/yr and average energy consumption per manufactures specifications of 7.551 w/sf.

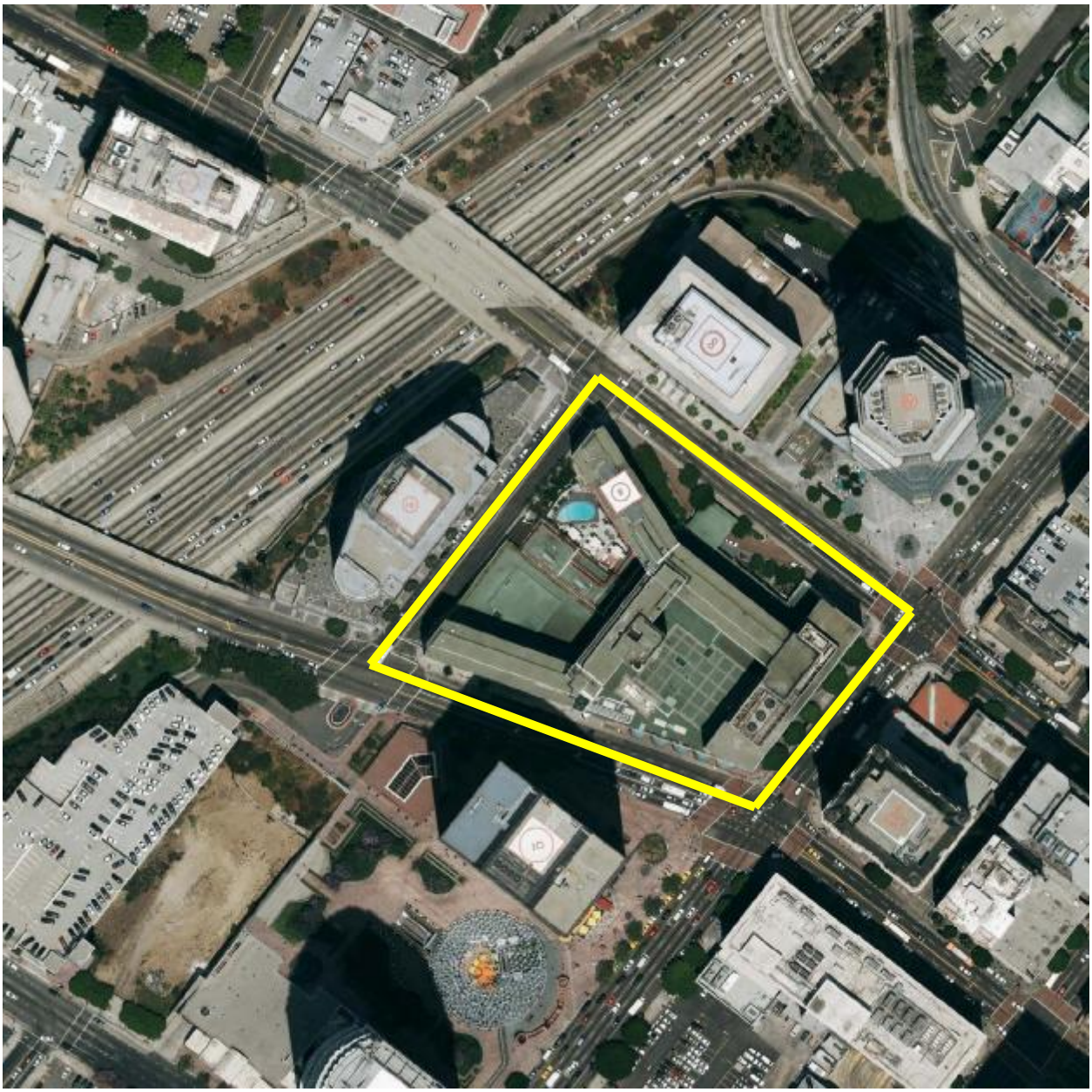
*****use largest consumption rate of two methodologies (SCAQMD or RASS/CEUS) for most conservative calculation.

SF is square feet

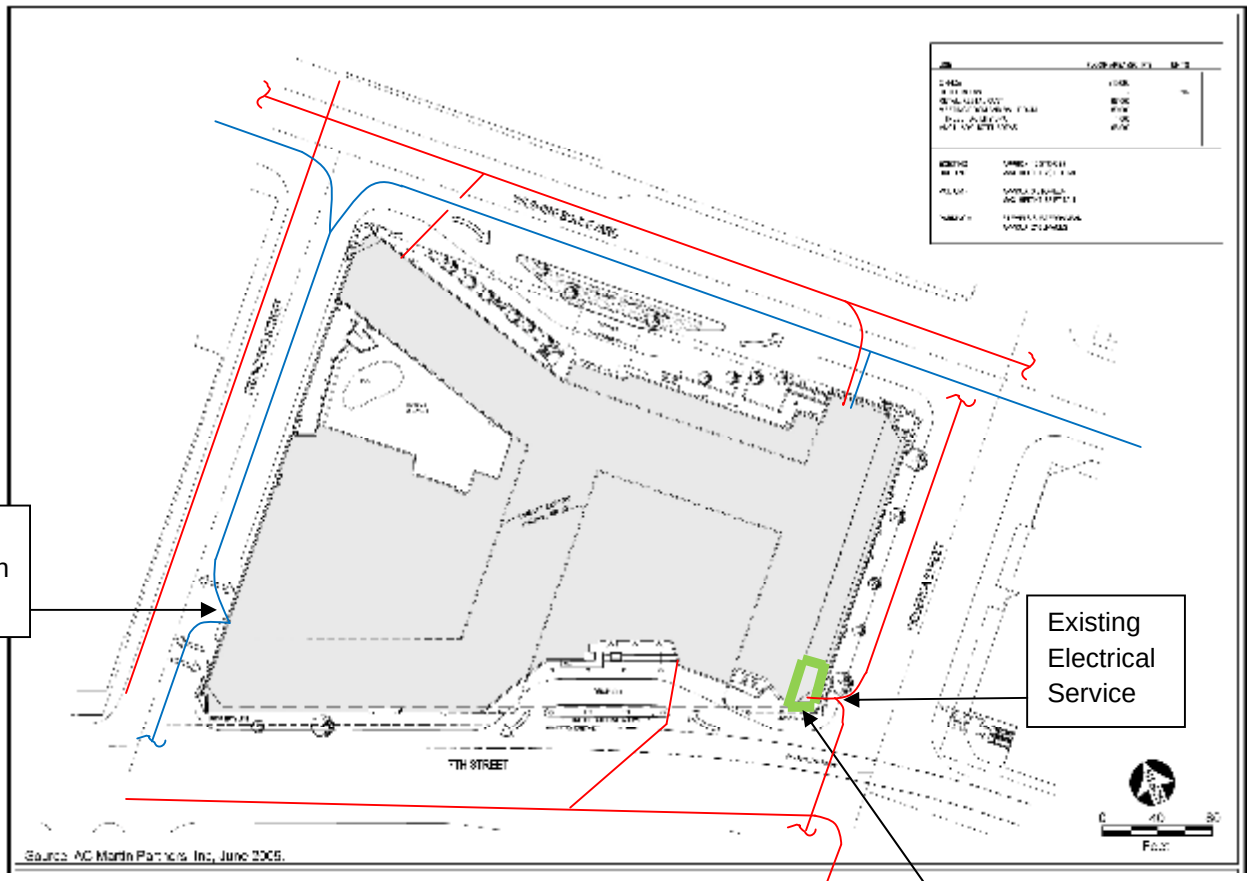
kWh/sf-yr is the kilo watt hours per square foot per year of electrical energy consumption.

11.0 FIGURES:

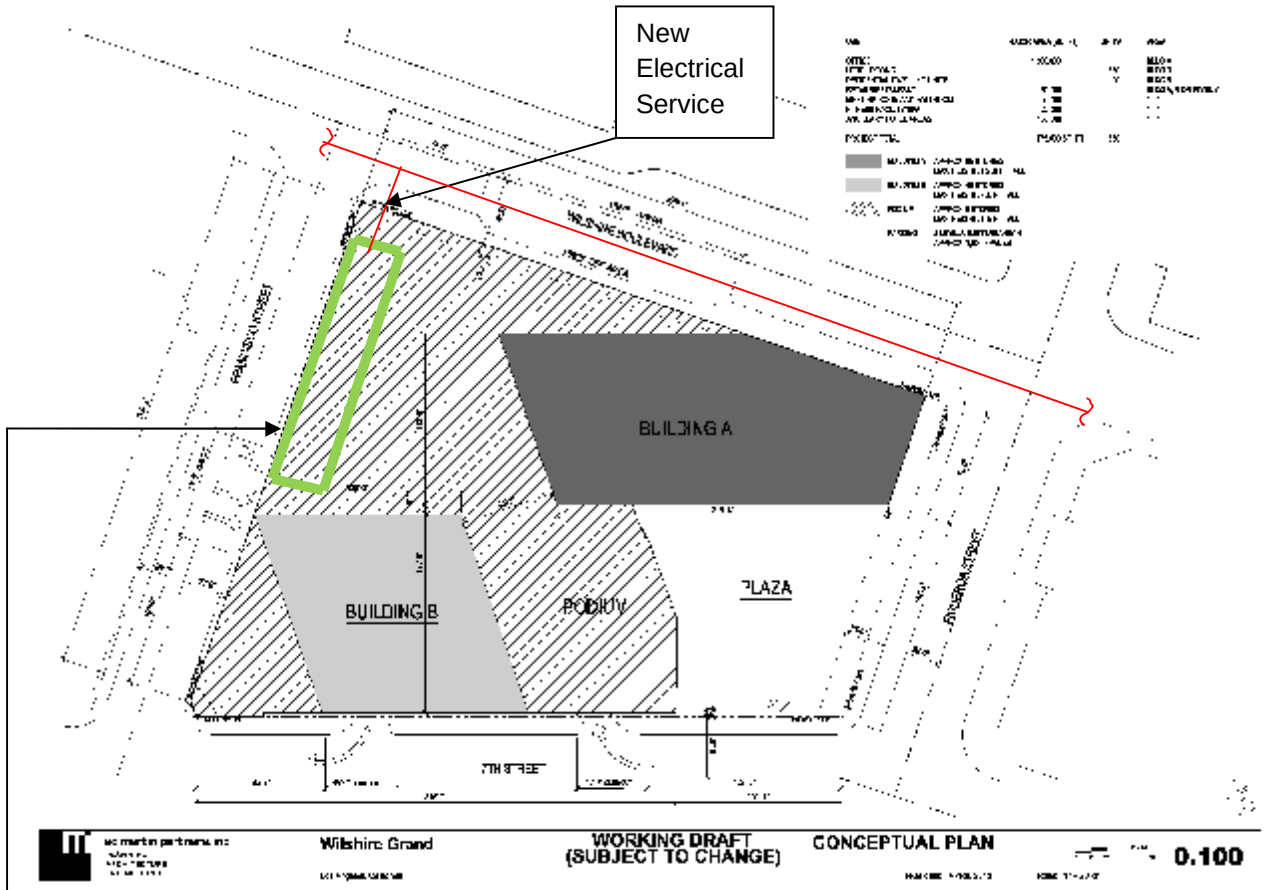
- 11.1 Figure 1: Proposed Project Site
- 11.2 Figure 2: Existing Site Plan
- 11.3 Figure 3: Proposed Project



11.1 FIGURE 1: PROPOSED PROJECT SITE



11.2 FIGURE 2: EXISTING SITE PLAN



11.3 FIGURE 3: PROPOSED PROJECT

Proposed location for new LADWP Customer Station

Appendix A
References

From: Holland, Mark [mailto:Mark.Holland@ladwp.com]
Sent: Thursday, August 20, 2009 1:22 PM
To: Jonathan Mitsumori
Subject: RE: Wilshire Grand development project

1.1 Regional Conditions

[No change]

1.2 Local Area Conditions

In this area of the City, larger loads are supplied directly from LADWP's 34.5 KiloVolt (kV) circuits that originate from Market Receiving Station P (RS-P) located at 560 S Wall Street. Smaller individual loads in this area of the City are usually supplied by LADWP's 4.8-kV distribution system.

Existing 4.8-kV circuits to this area originate from DS-42 located at 432 S Grand Avenue. LADWP presently operates both 34.5-kV and 4.8-kV underground circuits in Wilshire Boulevard.

1.3 Site Conditions

There currently is an existing LADWP on-site transformer substation that serves the site. This will be replaced

5.2 Availability of Supply

LADWP will supply the Project from the 34.5-kV system due to the size of the Project. LADWP will supply the project based on the least cost to LADWP i.e. minimize the number of transformers and customer stations while supplying from a single secondary voltage.

LADWP is capable of serving the project without significant impact to their existing infrastructure

6.0 PROJECT DESIGN FEATURES

The project will have one service from LADWP. As noted above, electrical conduits, wiring and associated infrastructure will be brought from existing LADWP lines to the building itself. An indoor customer station will be provided. This station consists of stationary electrical equipment including transformers used to reduce the voltage of incoming supply lines to a lower level suitable for distribution within the buildings. It does not generate electricity.