

PARK

ELECTRICAL SETUP FOR COMMERCIAL

ELECTRICAL SETUP FOR RESIDENTIAL



3.4 DESIGN BASIS & ELECTRICAL LOAD ESTIMATE:

Electrical Power requirement for the project is estimated based on the following design parameters:

S.No.	AREA	LIGHT (Watt/Sqft)	POWER (Watt/Sqft)	EQUIPMENT (Watt/Sqft)
1.	STAIRCASE	0.40	0.00	0.00
2.	PARKING	0.16	0.00	0.00
3.	TOLLET	0.40	0.20	0.00
4.	LIFT LOBBY	0.51	0.20	0.00
5.	SERVICE	0.40	0.90	0.00
6.	ELEC ROOM	0.40	0.90	0.00
7.	PASSAGE	0.40	0.20	0.00
8.	GUEST ROOM	0.00	0.00	0.00
9.	MAID ROOM	0.40	4.00	10.00
10.	BANQUET	1.20	4.00	6.00
11.	KITCHEN	0.90	4.00	10.00
12.	MEETING	0.90	4.00	6.00
13.	UNIFORM ROOM/LINEN ROOM	0.60	0.00	0.00
14.	STAFF DINNING	0.51	1.00	10.00
15.	ALL DAY DINNING	0.51	1.00	10.00
16.	STORE	0.40	0.50	0.00
17.	GYM	0.90	4.00	10.00
18.	OFFICE	0.90	1.5	6.9
19.	CORRIDOR	0.40	0.20	0.00
20.	RETAIL	0.90	4.00	1.00
21.	RESTAURANT	0.80	4	10
22.	PRE FUNCTION	1.20	4.00	6.00
23.	RECEPTION	0.8	1.5	1

S.No.	AREA	LIGHT (Watt/Sqft)	POWER (Watt/Sqft)	EQUIPMENT (Watt/Sqft)
24.	HOUSE KEEPING	0.40	0.00	0.00
25.	BAR	0.80	4.00	10.00
26.	CLUB	0.90	4.00	10.00
27.	SPA	0.90	4.00	10.00
28.	FOOD SHOP	0.90	4.00	10.00
29.	FOOD COURT	1.20	1.00	0.00
30.	ANCHOR	0.90	4.00	1.00
31.	RETAIL	0.90	4.00	1.00
32.	ATRIUM	1.20	4.00	2.00
33.	MULTIPLEX	0.8	4.00	0.00
34.	AUDI	0.40	4.00	2.00
35.	LAUNDRY	0.80	4.00	4.00
36.	doctor cabin	0.8	4.00	4.00
37.	lab	0.90	4.00	5.00
38.	SNOOKER	0.90	4.00	5.00
39.	SQUASH COURT	0.90	4.00	5.00
40.	TABLE TENNIS	0.90	4.00	5.00
41.	CHESS AND CARROM	0.90	4.00	5.00
42.	STEAM	0.80	4.00	5.00
43.	SAUNA	0.80	4.00	5.00
44.	BOWLING ALLEY	0.90	4.00	5.00
45.	SERVICE / DISH WASH AREA	0.8	4.00	5.00
46.	ROH AREA FOR RETAIL BANQUET	1.20	4.00	6.00

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3.5 SOURCE OF POWER:

The overall maximum demand is approximately 8256 kW or 9173 KVA, at power factor 0.9. It is proposed to have Grid supply at 33KV from Electricity Supply Company.

3.6 33KV SUB STATION:

Power supply from point of supply at 33KV, shall be terminated to 33 KV HT panel on Ground level. The power supply at 33KV shall be terminated to the 33/11KV substations Located on ground level. Here we are proposing to have combined substation for Hotel and Commercial Block. This would result into better diversity and comparatively lesser equipment sizing. Substation shall consist of 33KV, HT Panel (1 U/C + 2 O/C) and 2Nos 33/11KV Oil filled Transformers. According to Load, we may have to provide 2 Nos. of 50 MVA, 33/11KV Oil filled Transformers.

3.7 BACK-UP POWER:

It is proposed to provide 100% power back-up, to the Offices, Service Apartments, Retail, common areas, Hotel etc. through 11V DG sets.

As per load calculations, approximately 12000 KVA backup power shall be required for commercial and hotel block. Hence we are proposing to have 6 Nos. of 2000KVA, 11V Radiator cooled type, DG sets for the same. Here we are proposing to have combined DG Plant room for Hotel and Commercial Block. For load calculations and DG set sizing, please refer Annexure E-1. DG sets are envisaged to be operated in auto as well as synchronized mode. Provision of PLC shall be done with Manual override facility, so that auto as well as manual operation can be done. DG set shall be provided with the 11 KV DG AMF cum synchronization and distribution panel and suitable rating, NGR panels. The DG sets shall be able to operate in isolation mode as well as synchronized mode. PLC shall be capable of doing following functions as min. requirement: a) It shall be able to start the desired DG sets in case of grid power failure condition or in case of under voltage / over voltage conditions of the grid supply. b) No. of DG sets shall be started based on the previous load history of mains operation. c) Closing / Opening of the Incomers, Outgoing and Bus Coupler breakers shall be controlled by the PLC as per the control logic. DG sets shall be provided with the DG set Controllers which shall have feature of recording the unit generated by the DG set. The metering parameters shall be transported to the BMS. Exhaust piping for the DG Sets shall be taken up to the highest point as per CPCB guidelines. For uninterrupted supply of fuel to the DG Sets, it is proposed to have Day oil tank, 900 ltr, one for each DG Set. Moreover one No. underground Bulk oil storage tank of suitable capacity may be planned at Ground level.

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NORTH

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