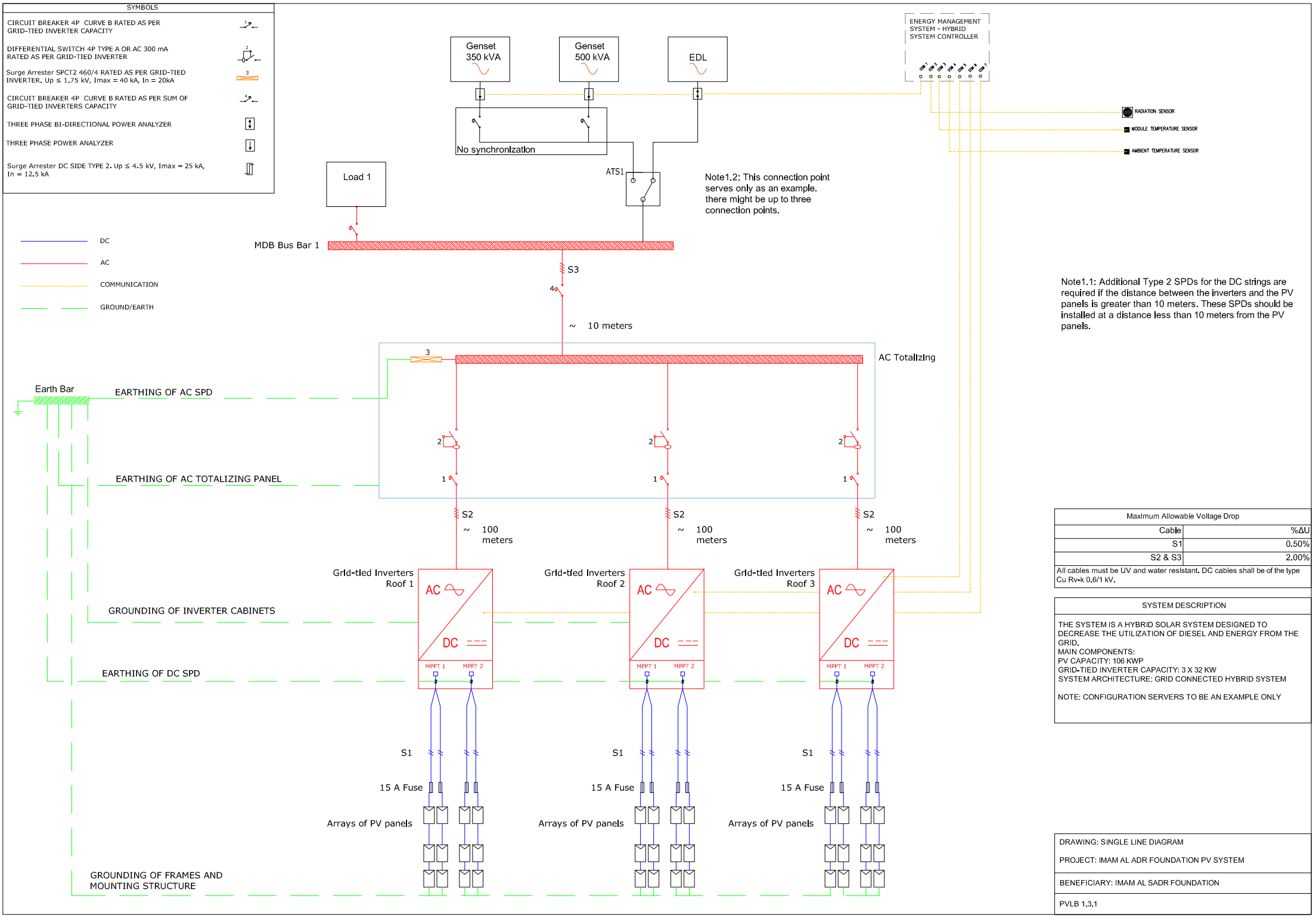


Maximum Allowable Voltage Drop	
Cable	%ΔU
S1	0.50%
S2 & S3	2.00%

All cables must be UV and water resistant. DC cables shall be of the type Cu Rv-k 0.6/1 kV.

SYSTEM DESCRIPTION

THE SYSTEM IS A HYBRID SOLAR SYSTEM DESIGNED TO DECREASE THE UTILIZATION OF DIESEL AND ENERGY FROM THE GRID.
MAIN COMPONENTS:
PV CAPACITY: 106 KWP
GRID-TIED INVERTER CAPACITY: 3 X 32 KW
SYSTEM ARCHITECTURE: GRID CONNECTED HYBRID SYSTEM

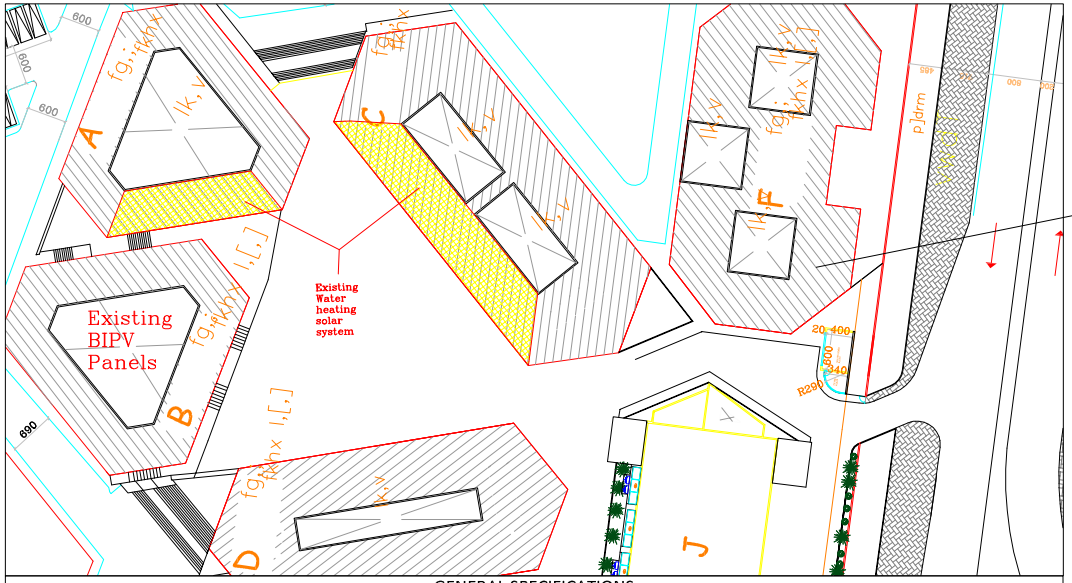
NOTE: CONFIGURATION SERVERS TO BE AN EXAMPLE ONLY

DRAWING: SINGLE LINE DIAGRAM

PROJECT: IMAM AL ADR FOUNDATION PV SYSTEM

BENEFICIARY: IMAM AL SADR FOUNDATION

PVLB 1.3.1



The hatched areas are the potential roof areas for PV instllation. An example instllation on roofs D,C and F is given here.

MODE OF OPERATION		
MODE	POWER SOURCE	GRID CONNECTED INVERTER OPERATION
Grid Mode	Grid	Load feeding (normal operation) Injection to the grid if any surplus
Fuel Reduction	Genset	Load feeding according to fuel reduction mode

SERVICE SPECIFICATIONS		
Output performance	Specific Yield	1,540 kWh/kWp
	Daily final average production (kWh/day)	447 kWh/day
Facility characteristics	Reference annual consumption (kWh/year)	835,000 kWh/year
	Estimated solar fraction	~ 19%

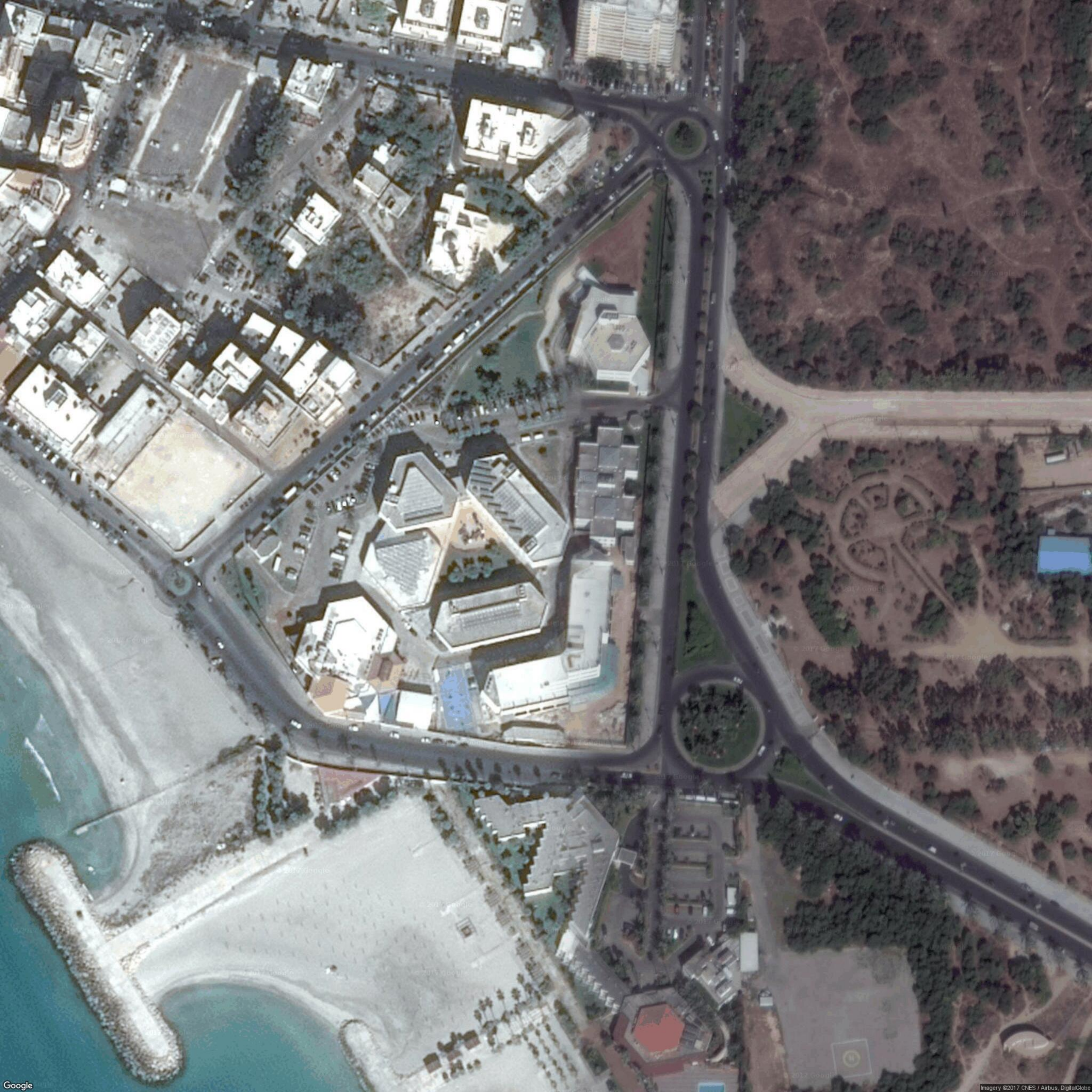
GENERAL SPECIFICATIONS		
Photovoltaic Generator	PV Capacity at STC (Wp) Building D	≥32,000 Wp
	PV Capacity at STC (Wp) Building C	≥30,000 Wp
	PV Capacity at STC (Wp) Building F	≥44,000 Wp
	Total PV Capacity at STC (Wp)	≥106,000 Wp
	Inclination	10º
	Type of module	Crystalline 72 cells
	Location and Orientation	Roof mounted, D: 167º, C: 138º, F: 183º
	Standards	EC 61215 edition 2, IEC 61730, IEC 62716, IEC 61701
Grid-Tied Inverter	Location	Outdoor
	Type	Three phase transformerless
	Rated power	≥95,000 W
	Number of MPP tracker	≥ 1
	Protection Class	≥ IP65
	Biggest voltage MPP range	150 V - 800 V
	Maximum DC voltage	1.000 V
	Output AC voltage	3 / N / PE 230, 400 V (adjustable)
	Output AC frequency	50 Hz (adjustable)
	Phi cosine	1
	THD	≤ 3%
	Consumption at night	≤ 3 W
	Maximum efficiency	≥ 98 %
	Euroefficiency	≥ 97 %
	Standards	Harmonic Current (IEC 61000-3-2 and / or IEC61000-3-4), IEC 62109-1/2
	Anti -islanding protection	Yes/ VDE 0126-1-1 or similar
	Comunication	RS485, ethernet, RS232
	Additional requirements	Dynamic compensation of reactive power, inverter automatic reconnection conditions, linear output power control from a third device (read and write capabilities), utility-interactive photovoltaic inverter system.
	Permissible grid characteristics (inverter not to be disconnected)	Vp-n = 230 V ±20%
		Vp-p=400 V ± 20%
		Fq = 50 ± 5 Hz
PV plant controller & data logger	Type	Fuel reduction device
	Communication	RS485, Ethernet and/or RS232 (compatible with Grid-dependent inverter, existing Genset control Unit, environment sensors and electrical meters)
	Inputs	Meters, sensors, inverters, Genset Control Unit, Grid (consumption)
	Outputs	Inverters, Grid (back-feeding)
	Data logger	2 years data logging capacity, monthly evaluation report, calculation of indicators and remote monitoring

DRAWING: SYSTEM LAYOUT AND ARCHITECTURE

PROJECT: IMAM AL SADR FOUNDATION PV SYSTEM

BENEFICIARY: IMAMA AL SADR FOUNDATION

PVLB 1.3.1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