UNDP Afghanistan

Site Assessment Data

Provision of Electricity and Hot Water Systems to Health Facilities in the Western Region

Date: 6-Feb-22

Name of Health Facility, Type	Janda khan BHC
Village, Province, District	Janda khan village, Karokh district, Herat Province
Name, phone number of contract person	Faridoon, 0797354265
Assessment Conducted by (UNDP Field Engineer)	Eng. Ebadullah Momand
Distance from Herat, type of road to the health facility	23 Km distance from Herat City (18 Km Asphalt road+5 Km Earth road) to HF
GPS Point (Coordinates)	34.32185° N, 62.44522° E
Review and recommendation of project manager	

S/N	Description	Field Data
1	Existing Power Source (Generator, Solar etc.) and its capacity in kW	Generator with 2.5 KW capacity. Not enough for clinic.
2	Number of rooms in the facility	Totally 10 Rooms, 4 Bathrooms, 1 Hall, Corridor
3	Existing house wiring? Number of power points	The HF has internal wiring. Outside of the building the toilets wiring is damaged need to Sockets and fuses.
4	Total electrical load - Total number of light bulbs- total Watt - Refrigerator, heater - total Watt - Any other equipment – total Watt *(Use a separate sheet, if required)*	Existing equipment: Bulbs: 34 Refrigerator: 0 Warmer:1 Ceiling fans: 11 Light (for chilled birth room):1 See Annex A & B for further details and need assessment
5	Cables, wiring, conduits, Junction box etc. require maintenance/replacement. If yes, prepare a BoQ.	Need Cable for Generator, Inside the main building wiring is right only vaccinator room wiring is damaged by fire some year ago need for near wiring, Main fuse box is failed need

		to replace. Toilets don't have sockets. All bulbs and holders are need to be replaced. See annex B for further details.
6	Existing streetlight in the compound?	Doesn't have street light
7	Total number of staff	8 personals (1 MD, 1 Midwife,1 supervisor CHS, 2 vaccinator, 2 guards)
8	Average number of patients per day	80 Patients per day
9	Existing water supply facility, existing plumbing system	HF has water supply facility, taking water from village water pipe scheme. And the cost of one cubic meter is 5 AFN. Has plumbing system, need to replace some equipment's (sink mixer). 4 bathroom are not connected to water tank need to connect to water supply system. Has five basin Need to replaced basin mixers, and need 7 more basins.
10	Existing water boiler? Provide detail (type, capacity, year of installations, lifespan etc.)	HF has 1 water boiler, but Failed. 80 lit, 2008.
11	Functional Water well in the facility. Water depth in the well. Water depth from the surface	Hand pump water well (Dug well) with 1 meter diameter, 31 meter depth, well is drayed don't have water, its located 5 meter far from the building. Recommendation: New bore hole is needed.
12	Capacity of water tank. Insulated or not? Tank height from the surface	1000 liter, not insulated. Water tank height is 6 meter from the surface.
13	Type of the existing Structure (RCC/load bearing walls)	RCC
14	Type of existing roof (Pitch or Flat)	Pitch, the length of the building is north to south, thus the south face of roof is few and cannot be used for a lots of solar panels. See site sketch for details
15	If the roof is Pitch, how many solar panels can be installed on the south face of the Pitch roof?	Roof is pitch but the south face of the roof is small area and can only install 7 No's (250 watt) solar panels.
16	If the roof is flat concrete, how many solar panels could be installed toward the south face?	RCC roof is pitch metal insulated. South face area is small, 7 or 8 solar panel can be mounted on the south face of the pitch roof.

17	Does the existing roof is fit for installation of Solar System or Required Maintenance/repairing works?	It's not fit. But there is enough open place in the yard of the clinic for mounting of solar panels. See site plane for further details.
18	If above answer is yes, prepare BoQ and estimation for the repairing/upgrading	Nil
19	Distance from roof to existing main panel board	Nil
20	Dimension of existing building in m. (Use a separate paper for a sketch)	Length: 17 m North to south Width: 12.5 m East to west
21	Are there any technical obstacles/challenges to affect the installation and implement of the solar system as planned? If yes, provide detailed information, recommendation, BoQ along with photos.	There were no technical obstacle and challenges for installation of solar panel. The responsible person expressed his willingness.
22	Is there access to the roof for installations of solar panels	Doesn't have stable stairs, uses very unstable wooden ladder.
23	Take photos of the facility showing a bird eye view, structures, wirings, existing electrical system and roof	Annex D: site photos

Surveyors' Comment: As this clinic provides health services to 22 villages (3545 households) and it is not connected to the grid electricity, doesn't have a powerful generator to solve the problem of electricity and other necessities. "Generator is working for only get water out of the well, when water is not coming from the village water network and the well have water'' said the responsible doctor. The clinic has an open sunny area on the ground surface for mounting solar panel system. So I recommend a solar panel system for this clinic. And a bore hole is needed as well.

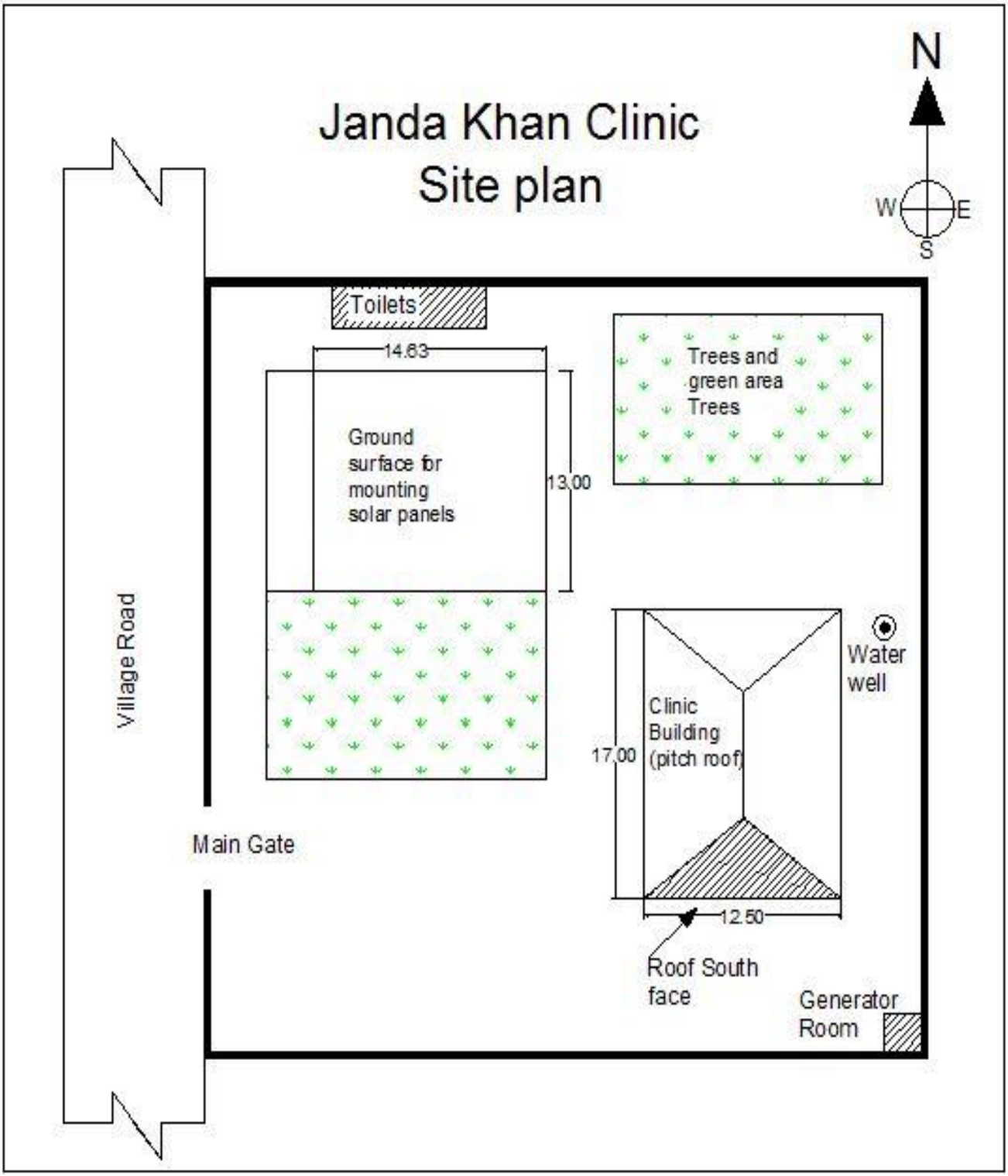
Annex A: Existing electrical appliances load calculation

Janda khanBH clinic exciting electrical equipment and energy consumption								
No	Equipment	Existing QTY	Power (watts)	Total Power (Watts)	Hours used per day	Energy used (watt-hours)	KW-Hr per day	Remarks
1	Bulbs	32	15	480	3	1440	1.44	
2	Refrigerators	0	0	0	0	0	0	
3	Water Boiler	0	1500	0	2	0	0	Not functional
4	Warmer	1	1500	1500	3	4500	4.5	
5	Auto Clave	0	1000	0	1	0	0	
6	LCD	0	60	0	10	0	0	
7	Exam light	1	50	50	3	150	0.15	
8	Fans	9	100	900	6	5400	5.4	
9	Street light	0	100	0		0	0	
10	Tatal			2930		11490	11.49	

Annex B: Needed electricity load assessment

Janda khan BH clinic- Karokh district Needed electrical appliances load assessment								
No	Equipment	QTY	Power (watts)	Total Power (Watts)	Hours used per day	Energy used (watt-hours)	KW-Hr per day	Remarks
1	Bulbs	40	15	600	3	1800	1.8	
2	Refrigerators	1	300	300	8	2400	2.4	
3	Water Boiler	1	1500	1500	2	3000	3	
4	Warmer	1	1500	1500	3	4500	4.5	
5	Auto Clave	1	1000	1000	1	1000	1	
6	LCD	1	60	60	6	360	0.36	
7	Exam light	1	50	50	3	150	0.15	
8	Fans	11	100	1100	10	11000	11	
9	Street light	1	100	100		0	0	
10	Total			6210		24210	24.21	

Annex C: Site plan


Janda Khan Clinic
Site plan
N
W
E
S
Toilets
14.63
13.00
Ground surface for mounting solar panels
Trees and green area Trees
Village Road
Water well
Clinic Building (pitch roof)
17.00
12.50
Main Gate
Roof South face
Generator Room