

AHMADU BELLO UNIVERSITY PHASE 2 NETWORK CONFIGURATION

SSID: NCC-BROADBAND

SECURITY KEY: Open Security

Additional Security: Captive Portal Authentication on the Sophos XGS firewall.

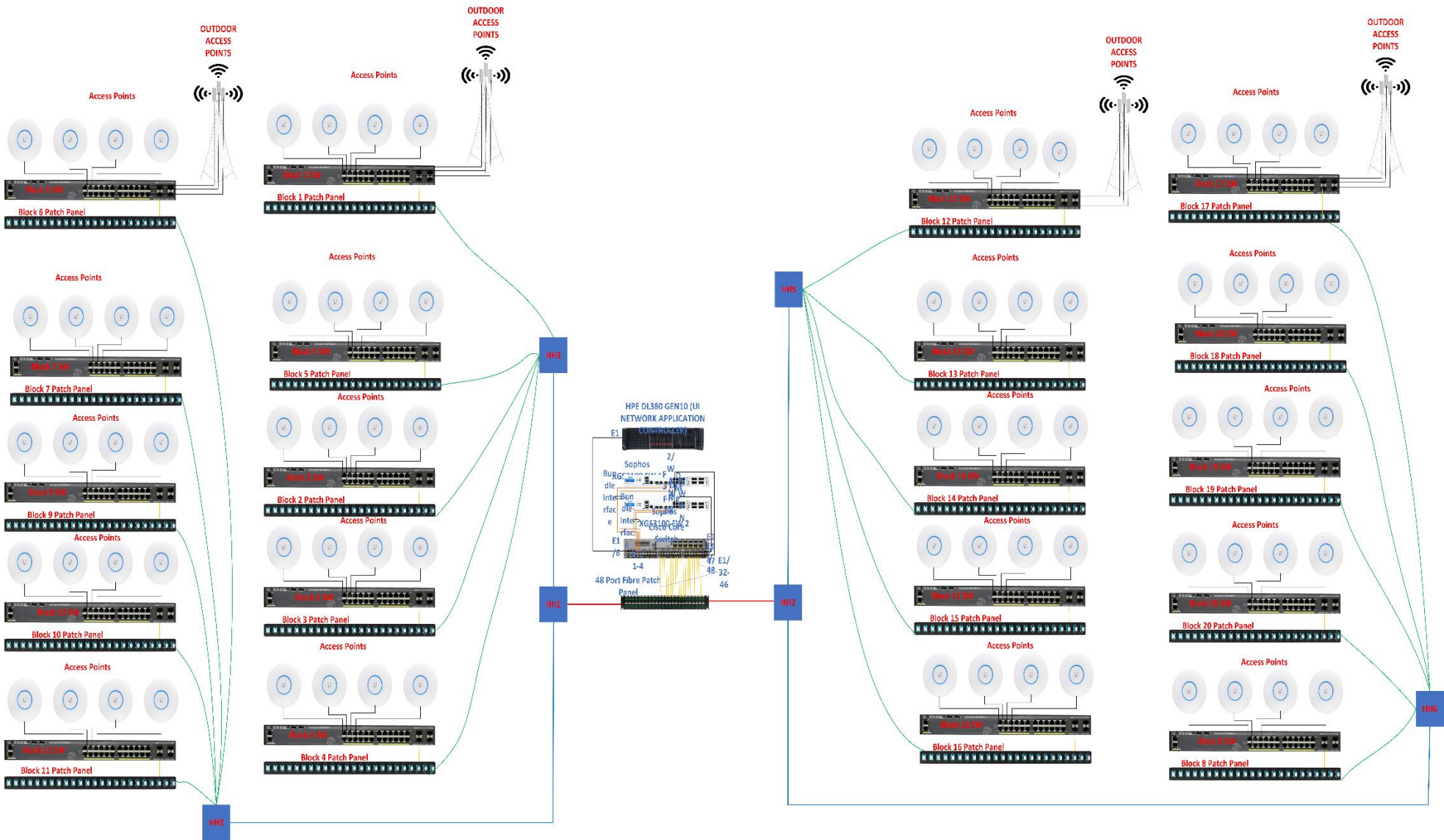


Figure 8: Network Design

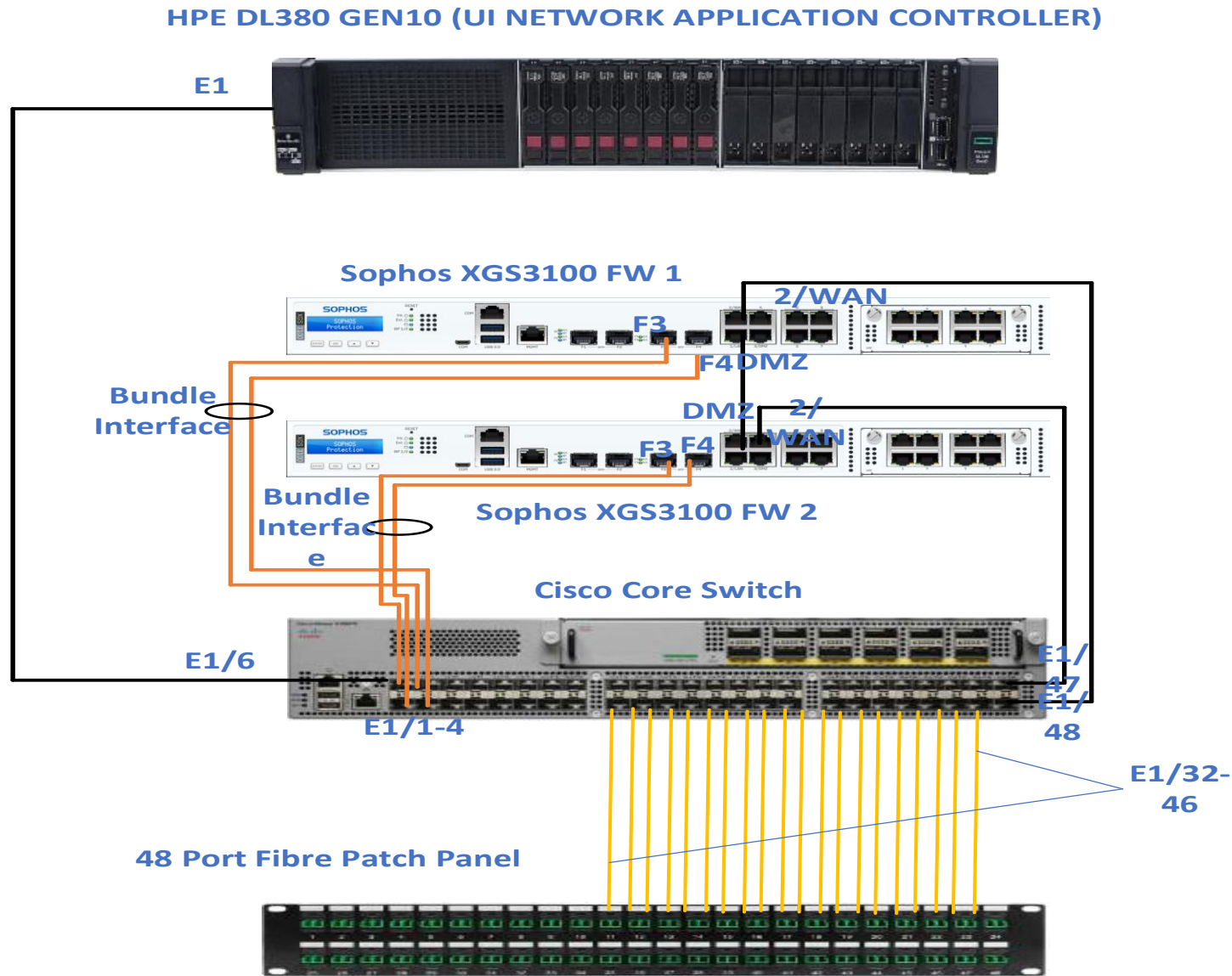


Figure 9: DATACENTER CORE NETWORK DESIGN



Figure 10: Internet Speed Test for Ahmadu Bello University

FIBRE OPTIC SECTION

School Name	Name of the Location	longitude	latitude	Coordinates
Abu Zaria	m18	7.639650487	11.13616238	7.6396647025576,11.13515395953534,0
Abu Zaria	m19	7.63817147	11.1357935	7.638120204216639,11.13540445206744,0
Abu Zaria	mh16	7.639051214	11.13800825	7.642861180450495,11.13583240261925,0
Abu Zaria	M1	7.640792437	11.13582906	7.641111946557202,11.1365928737992,0
Abu Zaria	m4	7.642360371	11.13687793	7.64159650030175,11.13718319400556,0
Abu Zaria	m5	7.641794758	11.13578756	7.64186059246319,11.13577507699519,0
Abu Zaria	m6	7.644127138	11.13746617	7.644728797376306,11.13769332645437,0
Abu Zaria	m7	7.646159829	11.13760176	7.647305224918616,11.13746390468868,0
Abu Zaria	m8	7.647010139	11.14040489	7.647752950321229,11.14094173160788,0
Abu Zaria	m9	7.648781353	11.14840545	7.648407572338463,11.15007098812061,0
Abu Zaria	m10	7.651228141	11.14855991	7.650781628544905,11.14848021981338,0
Abu Zaria	m11	7.653436299	11.14806125	7.653205886458039,11.14702952769917,0
Abu Zaria	m12	7.6534363	11.14803997	7.653470636973689,11.14724217135955,0
Abu Zaria	m10	7.640149685	11.13638355	7.639848954757058,11.13627804809291,0
Abu Zaria	m11	7.639089826	11.13662433	7.640128662680721,11.13824261459002,0
Abu Zaria	m12	7.641674363	11.13607753	7.641957919593326,11.13606210213607,0
Abu Zaria	m14	7.642815825	11.13708586	7.642439731027175,11.13760958807579,0
Abu Zaria	m15	7.639089826	11.13662433	7.636915595236533,11.13877389996249,0
Abu Zaria	m17	7.637673498	11.1367143	7.636455400963365,11.13581679295346,0
Abu Zaria	Mast 1	7.640993759	11.13713942	7.64279620103075,11.13568534563979,0
Abu Zaria	Mast 2	7.640993759	11.13713942	7.639357349364484,11.13749889781731,0
Abu Zaria	Mast 3	7.640993759	11.13713942	7.63790699124526,11.13958006033625,0
Abu Zaria	Mast 4	7.640993759	11.13713942	7.644750985428621,11.13857567126015,0
Abu Zaria	Abu 1	7.640226214	11.13893736	7.63812564710332,11.13914134978856,0
Abu Zaria	Abu 2	7.64099648	11.13599172	7.639342816734165,11.13717902362213,0
Abu Zaria	Abu 2	7.642388065	11.13823312	7.641325254920794,11.13831504900359,0
Abu Zaria	Abu 4	7.642388065	11.13823312	7.641954909992197,11.13768330138706,0
Abu Zaria	Abu 5	7.64238373	11.13718008	7.641261425210617,11.13718469091588,0

Abu Zaria	Abu 6	7.64238373	11.13718008	7.64204783816883,11.13715392542009,0
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Abu Zaria	Abu 8	7.643775477	11.13488037	7.641991723133332,11.13565040101501,0
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Abu Zaria	Abu 11	7.645368714	11.1383962	7.644075251967095,11.13819789546544,0
Abu Zaria	Abu 12	7.645368714	11.1383962	7.645048210509929,11.13797880459945,0
Abu Zaria	Abu 13	7.645368714	11.1383962	7.645047963013665,11.13834217924171,0

Table 4: Placemark for fiber optic cable delivery

SN	ROUTE	FIBRE CORE	TOTAL Distance
1	Major Backbone Fiber	96 Core	1.96Km
2	Sub Major Backbone Fiber	48 Core	0.82Km
3	Last Mile Fiber	12 Core	6.44Km

Fiber Optic Topology is a Point-to-Point network.

Closures are utilized in the Manhole

Table 5: Detail Optical Fiber Delivery

Name of the Location	Mapping from the Blocks/Mast	Patch Panel Type	Server Room Mapping	Patch Panel Type
Mast 1	P1	24 Port Patch Panel	P1	48 port patch Panel
Mast 1	P2		P2	
Mast 1	P3		P3	
Mast 1	P4		P4	
Mast 2	P1	24 Port Patch Panel	P5	
Mast 2	P2		P6	
Mast 2	P3		P7	
Mast 2	P4		P8	
Mast 3	P1	24 Port Patch Panel	P9	
Mast 3	P2		P10	

Mast 3	P3		P11
Mast 3	P4		P12
Mast 4	P1	24 Port Patch Panel	P13
Mast 4	P2		P14
Mast 4	P3		P15
Mast 4	P4		P16
Abu 1	P1		24 Port Patch Panel
Abu 1	P2	P18	
Abu 1	P3	P19	
Abu 1	P4	P20	
Abu 2	P1	24 Port Patch Panel	P21
Abu 2	P2		P22
Abu 2	P3		P23
Abu 2	P4		P24
Abu 2	P1	24 Port Patch Panel	P25
Abu 2	P2		P26
Abu 2	P3		P27
Abu 2	P4		P28
Abu 4	P1	24 Port Patch Panel	P29
Abu 4	P2		P30
Abu 4	P3		P31
Abu 4	P4		P32
Abu 5	P1	24 Port Patch Panel	P33
Abu 5	P2		P34
Abu 5	P3		P35
Abu 5	P4		P36
Abu 6	P1	24 Port Patch Panel	P37
Abu 6	P2		P38
Abu 6	P3		P39

Abu 6	P4		P40	
Abu 7	P1	24 Port Patch Panel	P1	48 port patch Panel
Abu 7	P2		P2	
Abu 7	P3		P3	
Abu 7	P4		P4	
Abu 8	P1	24 Port Patch Panel	P5	
Abu 8	P2		P6	
Abu 8	P3		P7	
Abu 8	P4		P8	
Abu 9	P1	24 Port Patch Panel	P9	
Abu 9	P2		P10	
Abu 9	P3		P11	
Abu 9	P4		P12	
Abu 11	P1	24 Port Patch Panel	P13	
Abu 11	P2		P14	
Abu 11	P3		P15	
Abu 11	P4		P16	
Abu 12	P1	24 Port Patch Panel	P17	
Abu 12	P2		P18	
Abu 12	P3		P19	
Abu 12	P4		P20	
Abu 10	P1	24 Port Patch Panel	P21	
Abu 10	P2		P22	
Abu 10	P3		P23	
Abu 10	P4		P24	
Abu 13	P1	24 Port Patch Panel	P25	
Abu 13	P2		P26	
Abu 13	P3		P27	

Abu 13	P4	24 Port Patch Panel	P28
Abu 14	P1		P29
Abu 14	P2		P30
Abu 14	P3		P31
Abu 14	P4		P32

Table 5: Fiber Optica Cable Mapping between Building blocks and Main Server Room

Fibre Installation Parameters	
Parameters	Units
Threnching Dept	1.2Meters
Warning Tape	Yes Included
Route Marker	Installed at every 100 Meters
Thrustboring	400Meters
HDPE Pipe Sizes Used	40mm
Number of Core Splice at each Building	24 cores
Size of Patch Panel used in the server room	96 cores
Size of Patch Panel used in the Building blocks	48 Cores

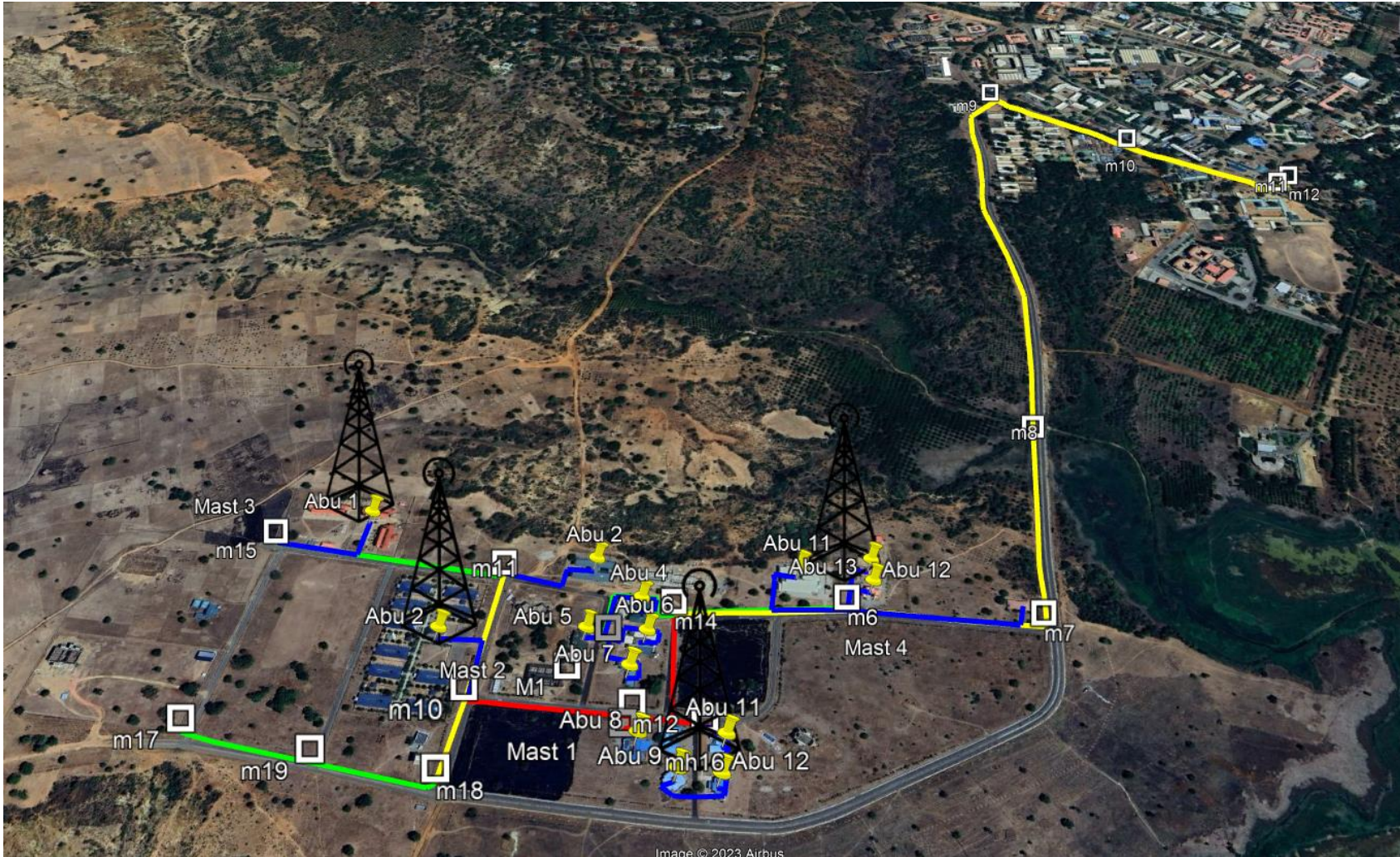
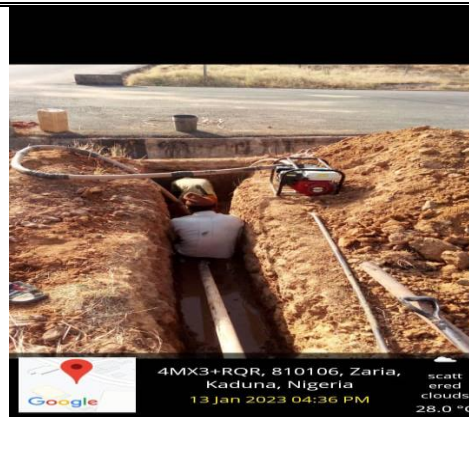
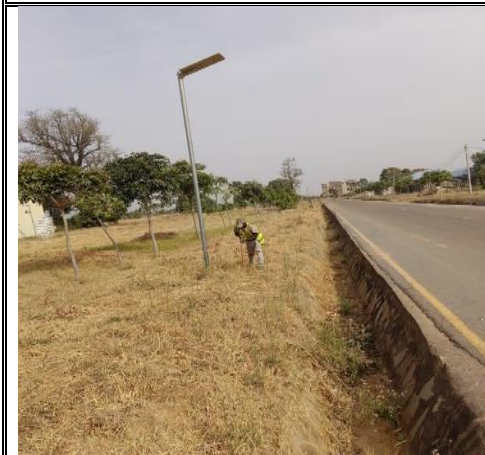
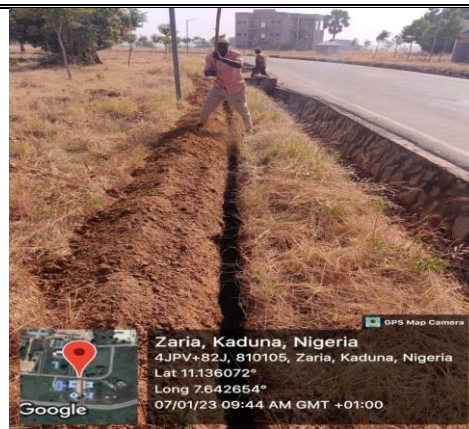
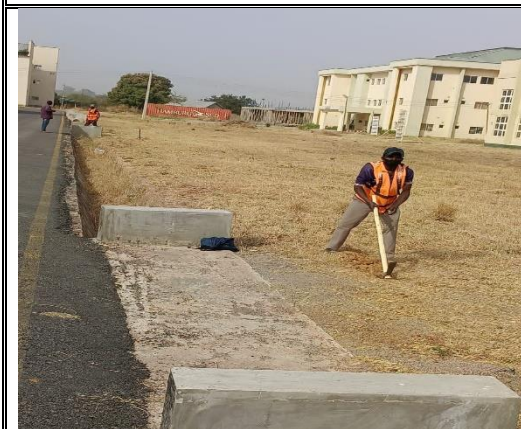
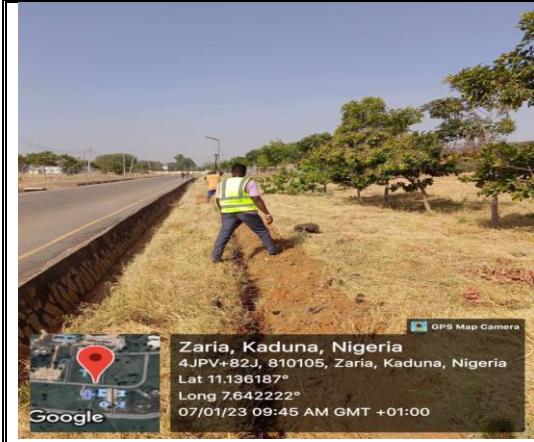
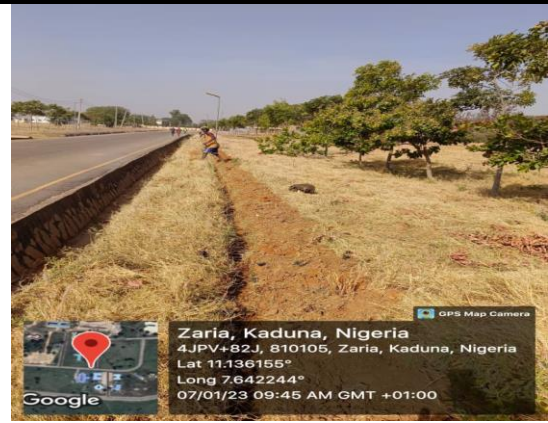


Figure 11: Fiber Route Map

IMPLEMENTATION PICTURES

FIBRE TRENCHING



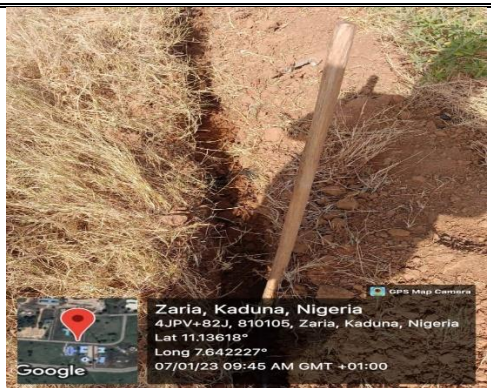




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scattered clouds
29.0 °C
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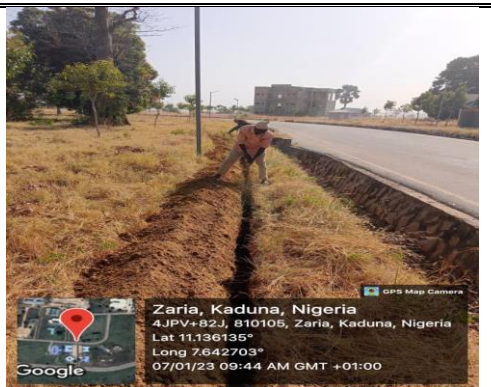
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Long 7.641434°
07/01/23 09:47 AM GMT +01:00



Zaria, Kaduna, Nigeria
4JPV+82J, 810105, Zaria, Kaduna, Nigeria
Lat 11.13618°
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07/01/23 09:45 AM GMT +01:00



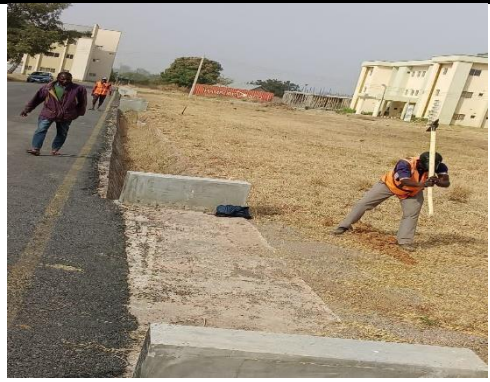
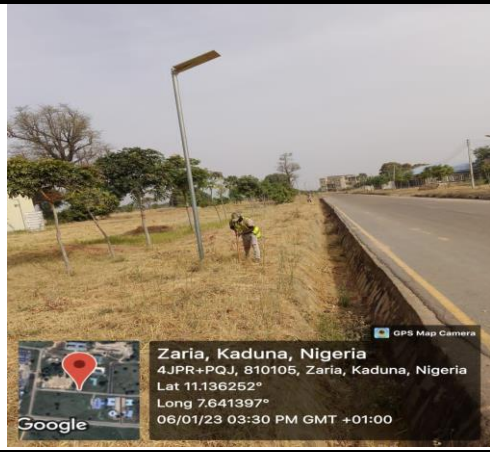
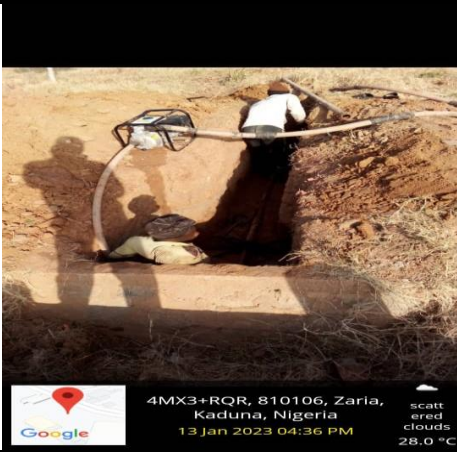
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Zaria, Kaduna, Nigeria
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Zaria, Kaduna, Nigeria
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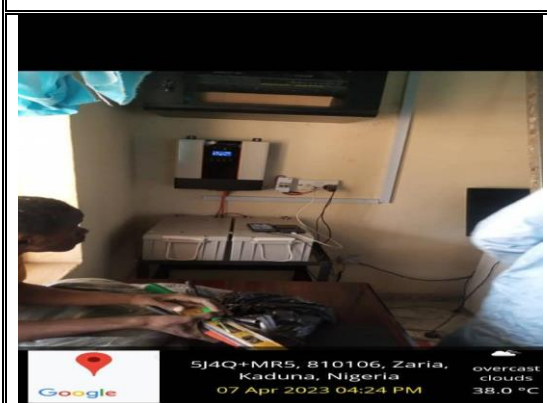
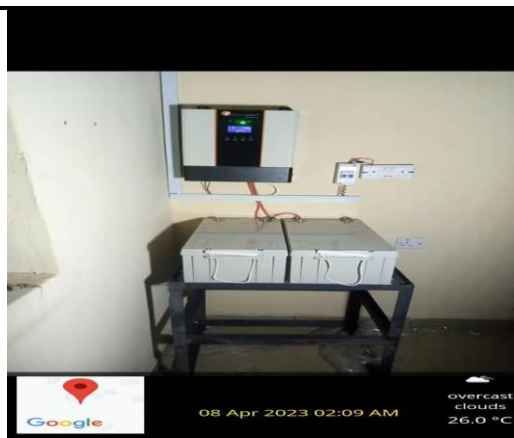






POST IMPLEMENTATION

FIBRE THRENCING





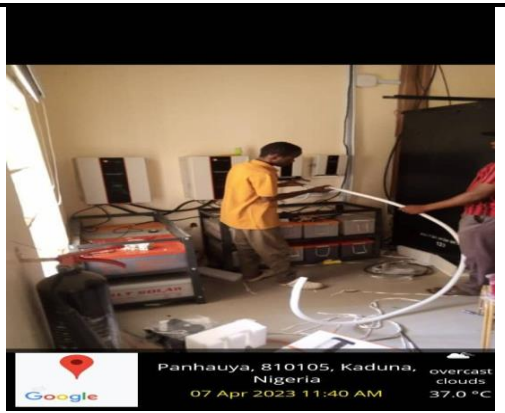
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07 Apr 2023 04:23 PM
overcast clouds
38.0 °C



4JXX+7J4, 810106, Zaria, Kaduna, Nigeria
07 Apr 2023 02:02 PM
overcast clouds
38.0 °C



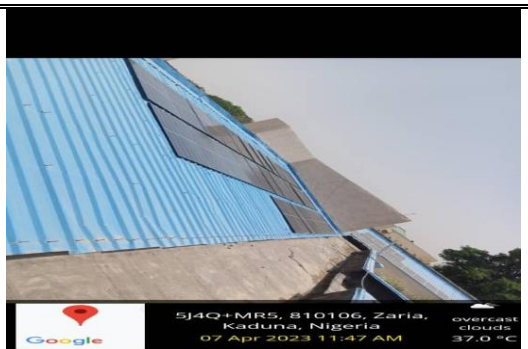
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Panhauya, 810105, Kaduna, Nigeria
07 Apr 2023 11:40 AM
overcast clouds
37.0 °C



4JXX+7J4, 810106, Zaria, Kaduna, Nigeria
08 Apr 2023 12:21 AM



5J4Q+MR5, 810106, Zaria, Kaduna, Nigeria
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overcast clouds
37.0 °C



4JXX+7J4, 810106, Zaria, Kaduna, Nigeria
07 Apr 2023 02:05 PM
overcast clouds
38.0 °C





