

Knitex Dresses Ltd.

Sultan Market, Sharodagonj, Kashimpur, Gazipur

(23.972620N, 90.293882E)

05 December 2021



Building information

Building-1 (AOP Production Building): 4 storied (G+3+M) reinforced concrete (RC) building

Building-2 (Utility Building): 4 storied (G+3) reinforced concrete (RC) building.

Building-3 (AOP Steel Shed): Single storied prefabricated steel shed.

Building-4 (Garments Production Building): 6 storied (G+5) reinforced concrete (RC) building.

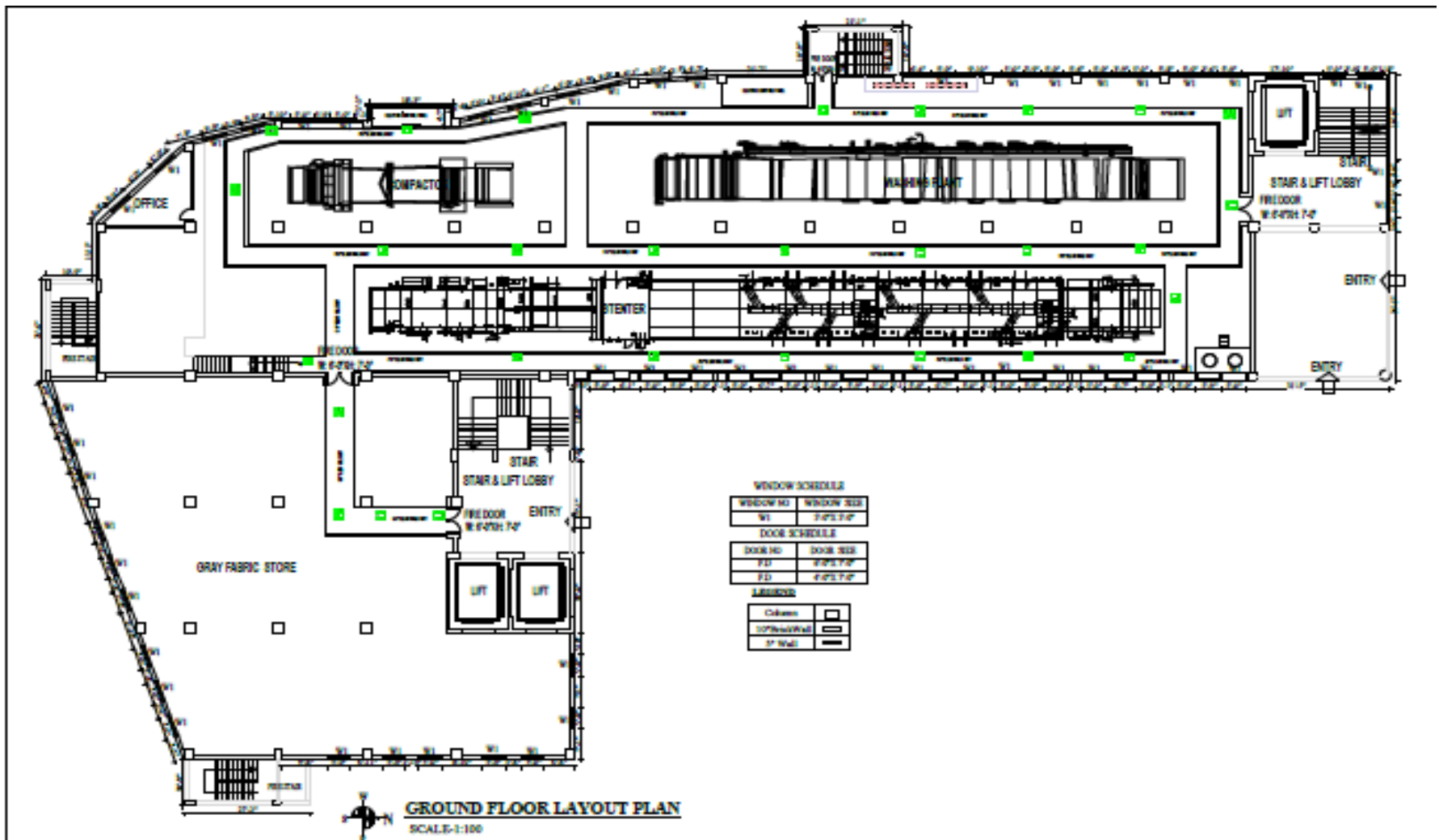
Building-5 (Fire Pump Room): Partial single storied reinforced concrete (RC) building with a basement floor.

Building-6 (Wastage Godown): Single storied steel shed.

There are 3 ancillary structure in the premises those are ETP, security & fire control room, utility bridge.

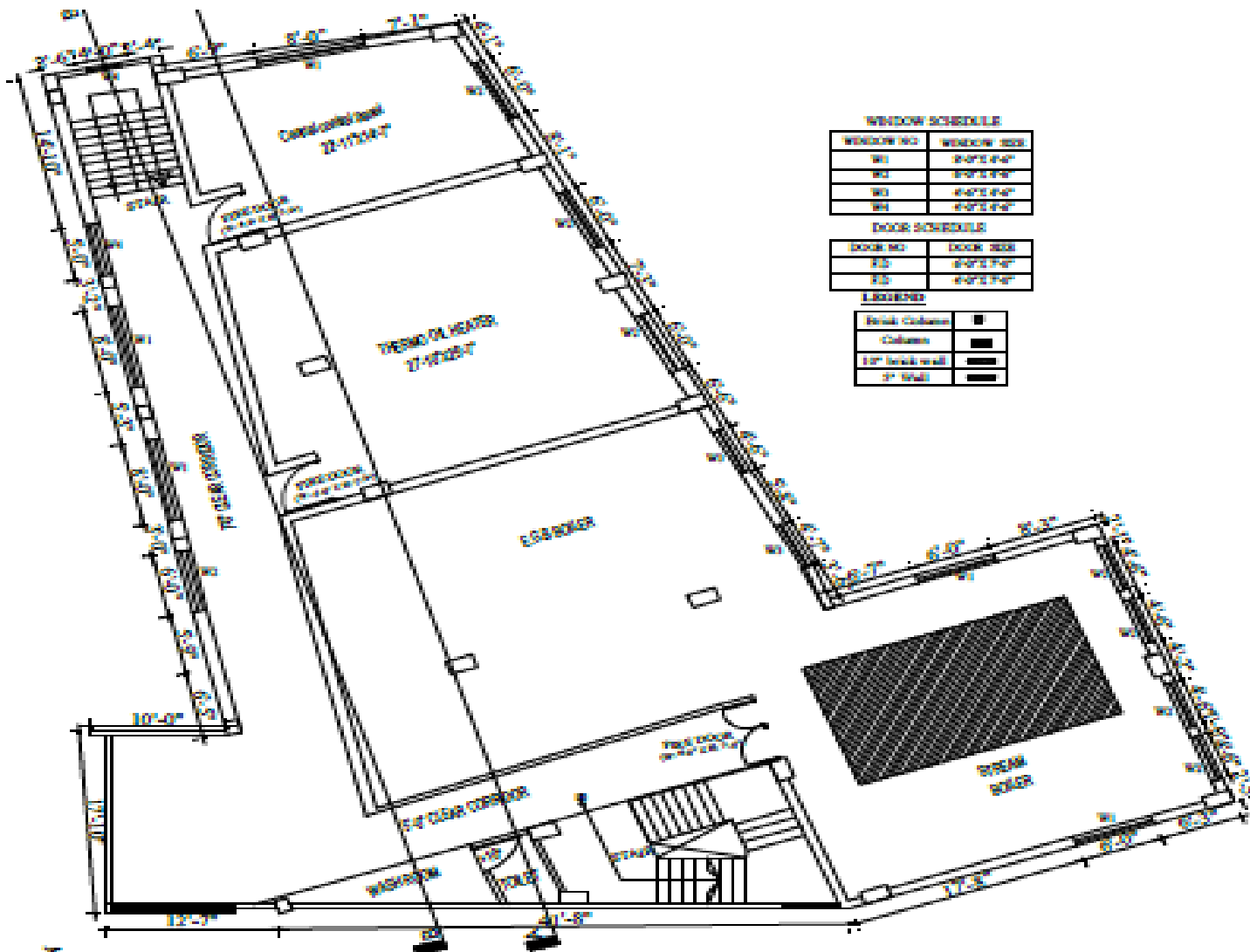
Observations

Irregularities check not included in the DEA report



The building is irregular in shape. Irregularity of re-entrant corner & torsional irregularities have not been checked in the provided DEA report. Building engineer is required to check all type of irregularities & incorporate it in the software-based FEA model & DEA report.

**Torsional irregularity check not included in
the DEA report**



As per building plan, it has an irregular shape which induced torsion into the structure. Building engineer is required to check all type of irregularities & incorporate it in the software-based FEA model & DEA report.

Consideration of material test report in DEA

4. Material

Concrete: Concrete strength has been considered as per BNBC-2006.

Location of Cylinder	Concrete Cylinder Strength (psi)	Standard Deviation (psi)	Standard Deviation (MPa)
Column and Lift Wall	7018	1048	7.2
	6265		
	7090		
	4630		
	4330		
	4754		
	4790		
	5171		
	5786		

9 test results consideration in DEA report

Location	Concrete cylinder strength (psi)
Foundation	6265
Foundation	3470
Foundation	7090
Column	3510
Column	4630
Column	3250
Floor	3470
Floor	3660
Floor	5171
Floor	5786

10 set of concrete cylinder test results from the factory excluding reports doesn't have average value.

Concrete cylinder test results do not match with the cylinder strength used in the calculation of DEA report. Also, the number of cylinder (9 instead of 10) and location (no lift wall but mentioned in DEA) did not match between test report and DEA. However, the building engineer is required to evaluate the material strength from actual concrete cylinder test report.

Discrepancies between drawings & as-built condition



No column schedule was available for building-3 main part



Flange thickness found 6 mm instead of 8 mm



Mismatch in column size of mezzanine floor, Column size found (340 x 400) mm instead of (350 x 350) mm

Column schedule of main part was not available in drawings, mismatch was observed in column size of mezzanine floor & rafter size of main part. The building engineer is required to survey the structure and produce accurate as-built drawings.

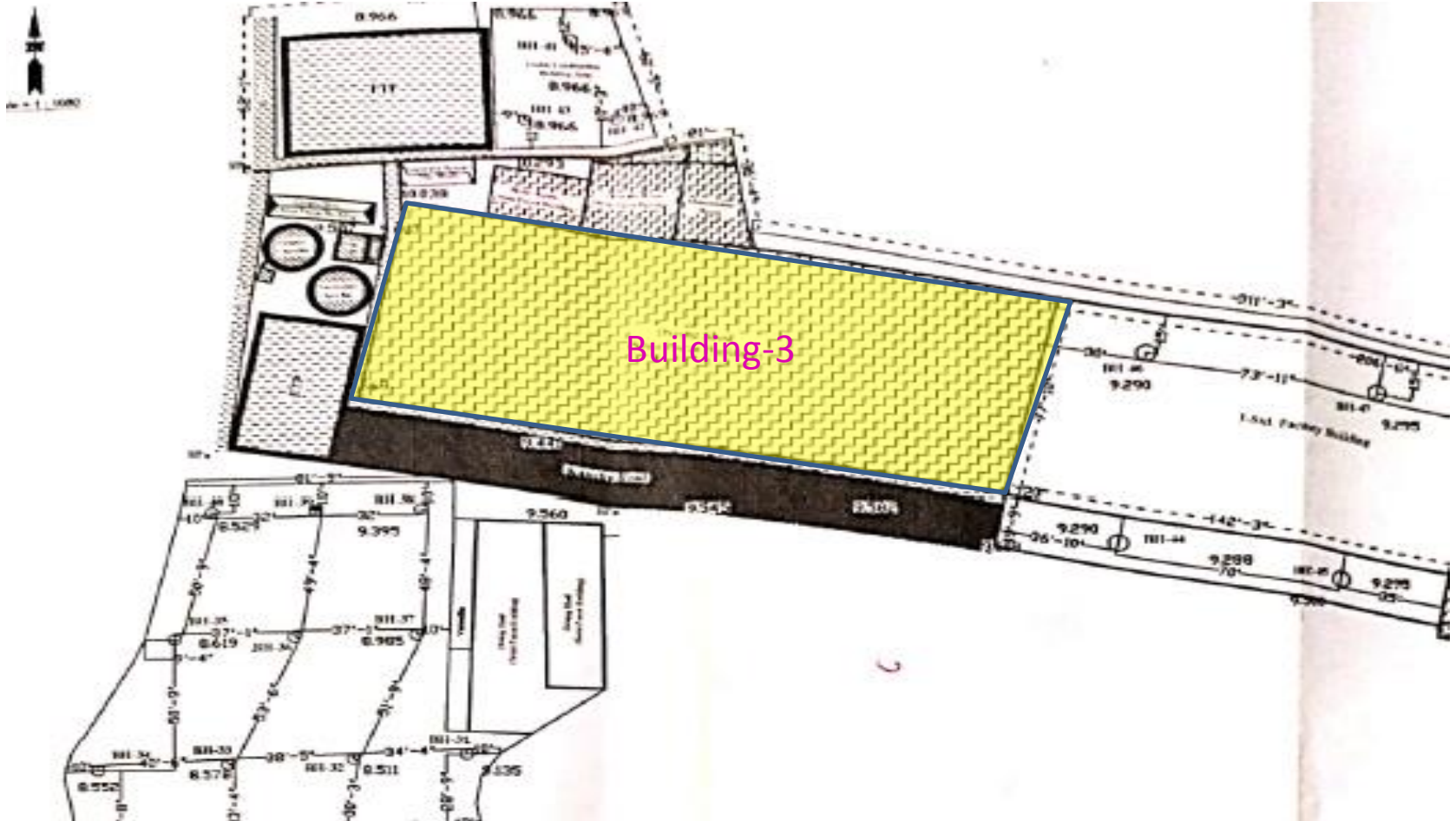
Lack of lateral stability system



Absence of roof bracing & lateral load transfer media along ridge

Lack of lateral stability system observed at the roof of the shed. Building engineer is required to check the lateral stability of the structure and suggest proper remedial actions accordingly.

Bore hole did not covered the building plan



Locations of bore hole in the building area are missing in the soil test report.

Conduct geotechnical investigation to close vicinity of the structure, determine actual soil bearing capacity and check the foundation adequacy accordingly.

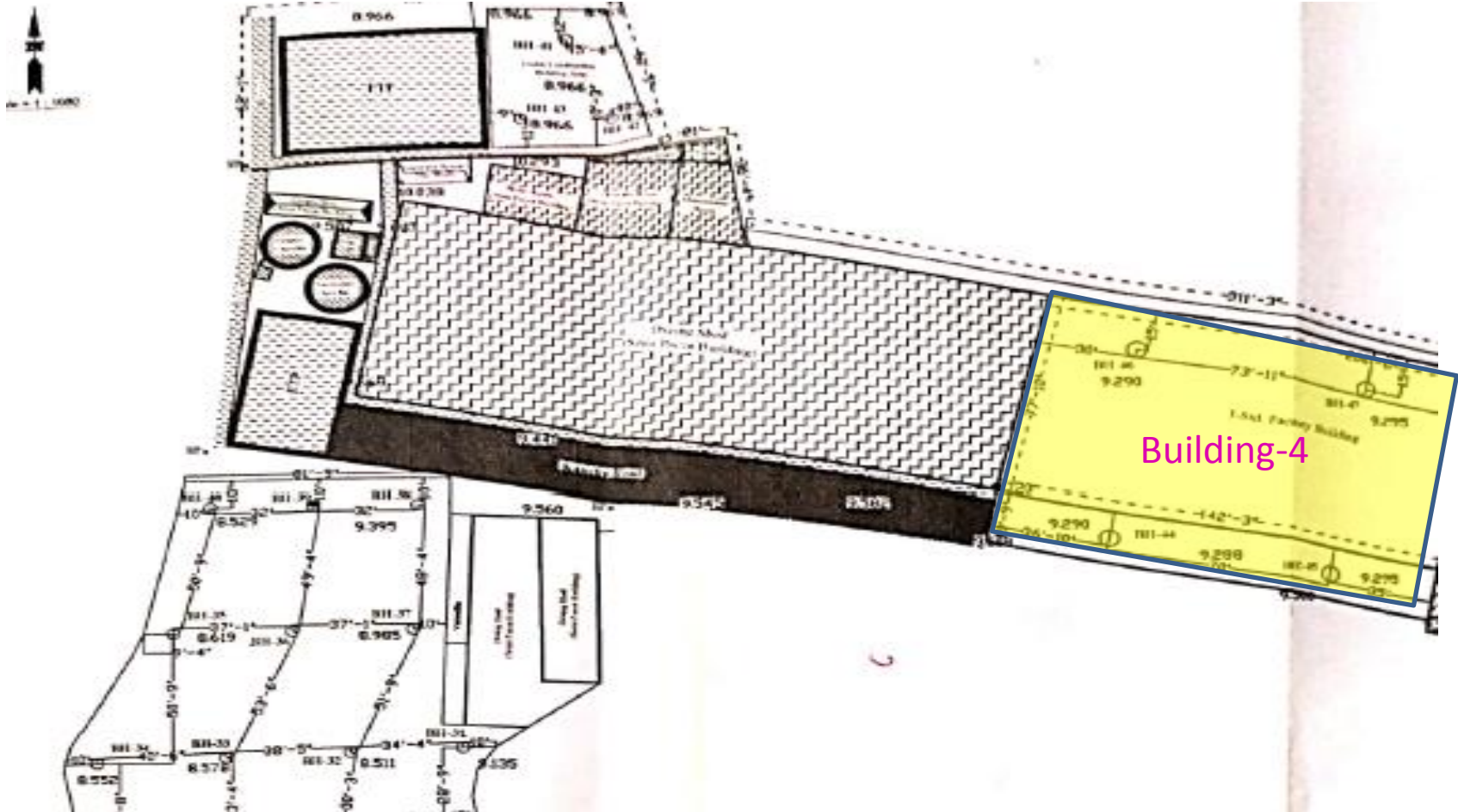
Gap between connection plates



Connection gap at rafter joints

The building engineer is required to fill the connection gaps of all joints.

Bearing capacity consideration in foundation design



Only 4 bore hole available near the building. In DEA report, bearing capacity of all 45-bore hole has been considered in foundation calculation. Bearing capacity must be considered as per bore hole close to the building plan.

Water proofing at roof



No Water proofing layer has been provided on roof

Develop proper drainage system on the roof with adequate slope and apply water proofing layer on the roof to resist water ingress into the slab.

Apparently non engineering shed



Poor connections, inadequate members were observed on-site. Therefore, the roof system seems to be non-engineered.

Problems Observed

Building-1 :

Item 01: Irregularities check not included in the DEA report.

Building-2 :

Item 02: Torsional irregularity check not included in the DEA report.

Item 03: Consideration of material test report in DEA report.

Building-3:

Item 04: Discrepancies between drawings & as-built condition.

Item 05: Lack of lateral stability system.

Item 06: Bore hole did not covered the building plan.

Item 07: Gap between connection plates.

Building-4:

Item 08: Bearing capacity consideration in foundation design.

Item 09: Water proofing at roof.

Building-6:

Item 10: Apparently non-engineering shed.

Priority Actions

Item No.	Observation	Recommended Action Plan	Recommended Timeline
01	Irregularities check not included in the DEA report. (Building-1)	Building engineer is required to check all type of irregularities & incorporate in the software-based FEA model & DEA report.	6-weeks
02	Irregularities check not included in the DEA report. (Building-1)	Implement remedial works where required.	6-weeks
03	Torsional irregularity check not included in the DEA report. (Building-2)	Building engineer is required to check all type of irregularities & incorporate in the software-based FEA model & DEA report.	6-months
04	Torsional irregularity check not included in the DEA report. (Building-2)	Implement remedial works where required.	6-months
05	Consideration of material test report in DEA report (Building-2)	Building engineer is required to calculate material strength according to the test report and incorporate in the FEA model & DEA report.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
06	Consideration of material test report in DEA report (Building-2)	Implement the remedial actions if required.	6-months
07	Discrepancies between drawings & as-built condition. (Building-3)	The building engineer is required to survey the structure and produce accurate as-built drawings.	6-weeks
08	Lack of lateral stability system. (Building-3)	Building engineer is required to check the lateral stability of the structure and suggest proper remedial actions accordingly	6-weeks
09	Lack of lateral stability system. (Building-3)	Carry out remedial works suggested by the engineer.	6-months
10	Bore hole did not covered the building plan. (Building-3)	Conduct geotechnical investigation to close vicinity of the structure, determine actual soil bearing capacity and check the foundation adequacy.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
11	Bore hole did not covered the building plan. (Building-3)	Implement remedial works if required.	6-weeks
12	Gap between connection plates. (Building-3)	The building engineer is required to fill the connection gaps for all joints.	6-weeks
13	Bearing capacity consideration in foundation design. (Buuilding-4)	Building engineer is required to consider bearing capacity of soil according to the bore hole close to/cover the building plan.	6-weeks
14	Bearing capacity consideration in foundation design. (Buuilding-4)	Implement the remedial actions if required.	6-months
15	Water proofing at roof (Building-4)	Develop proper drainage system on the roof with adequate slope and apply water proofing layer on the roof to resist water ingress into the slab.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
16	Apparently non-engineering shed (Building-6)	Building engineer to survey the structure, check the roof system, connections, member adequacy and suggest required actions.	6-weeks
17	Apparently non-engineering shed (Building-6)	Implement the actions suggested by the engineer.	6-months