ESPRIT APPARELS LTD.

8/3,Raj Nagar Road, Sataish,Tongi, Gazipur-1712, Bangladesh

(23.919638, 90.360546)

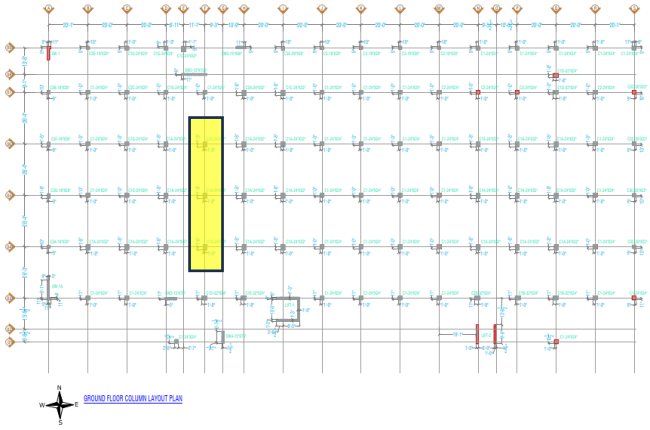
20 October 2025

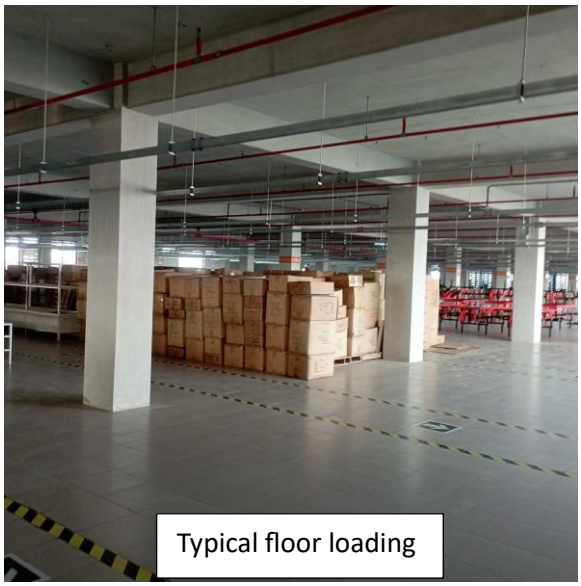
1. Building Information

1.	Building-1: Production Building	Partially seven-storied (G+6) RC building.
2.	Building-2: Admin Building	Four-storied and a basement (B+G+3) RC building.
3.	Building-3: Utility Shed	Single storied steel shed with underground pump room.
4.	Building-4: Cycle Parking Shed	Single-storied steel shed.
5.	Building-5: Security Room	Single-storied RC structure.
6.	Building-6: Medical and Childcare	Single-storied masonry structure with steel roof.
7.	Building-7: Wastage Shed	Single-storied masonry structure with steel roof.
8.	Building-8: Boiler Building	Single-storied RC structure.

2. Observation

Observation-01: Stress in the column exceeds the normal design limit (Building-1: Production Building).





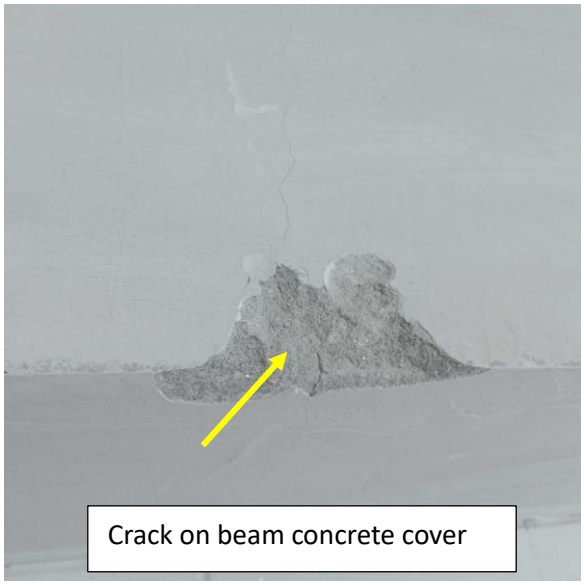
Typical floor loading

Description: Cursory calculation indicates that stress in column exceeds normal design limit at marked locations, considering the prepared live load plan (6 kPa for typical floor, 5 kPa for stair, and 5 kPa for roof) and minimum concrete strength (16.13 MPa) based on aggregate type. Also, an inadequate number of concrete cylinder test reports were available, which doesn't meet the frequency of testing as per BNBC. The building engineer is required to review the design, loads, and column stresses for the area identified above. Verify in-situ concrete strength by taking 4-100 mm diameter cores from the structural elements (Column, beam/slab). Produce and actively manage the loading plan.

Observation-02: Crack on the brick wall (Building-1: Production Building).

Description: A crack was found on the brick wall on the 2nd-floor toilet area. The building engineer is required to repair the crack on the wall with a suitable method.

Observation-03: Crack on the beam concrete cover (Building-1: Production Building).



Description: Cracks were found on the beam on the concrete cover at several locations. The building engineer is required to investigate the crack surface of the beam and prepare an investigation report. Keep the investigation report onsite and repair the crack on the beam as per the investigation report.

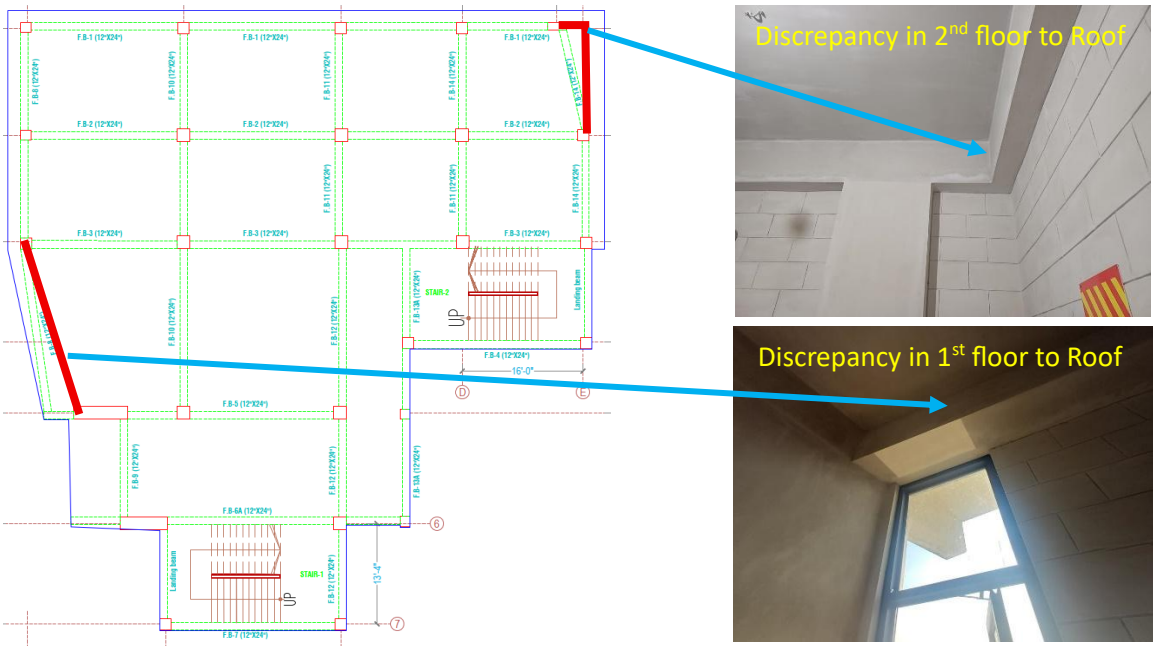
Observation-04: Possible vehicle impact on the ground floor (Building-1: Production Building).

Description: An exposed column was found on the ground floor, prone to vehicle impact. Only an angle was found installed on the column. The building engineer is required to provide an adequate barrier around all exposed columns to prevent vehicle impact.

Observation-05: Falling hazard at roof level (Building-1: Production Building).

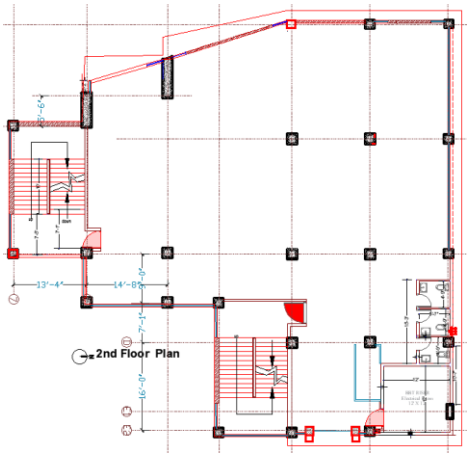
Description: The parapet was missing at the roof level, which could cause a falling hazard. The building engineer is required to provide edge protection to avoid a falling hazard. Also, provide an adequate handrail on the steel ladder.

Observation-06: Discrepancies in as-built drawing (Building-2: Admin Building).



Discrepancies in beam layout at typical floor

OHWT – not shown



Occupnacy type – not mentioned

Description: Several discrepancies were identified, including mismatches in beam layout, the overhead water tank not reflected in the drawing, and the occupancy type not specified in the as-built drawings. The building engineer is required to update the as-built drawing as per onsite condition.

Observation-07: Inconsistencies in EA report (Building-2: Admin Building).

- Compressive strength of concrete for pile, f_c' = **3,000 lb/in²**
- Compressive strength of concrete for column SW and Pile Cap, f_c' = **4,000 lb/in²**
- Compressive strength of concrete for beam and slab, f_c' = **3,000 lb/in²**

Concrete strength considered in EA

The structural system of the building is an RCC frame structure along with RCC columns, shear walls and beams. The building is classified as **Dual System with an Intermediate Moment Resisting Frame** structure. General 3D view of the building has been presented in Figure **3.1.1**.

Structural system considered in EA

Observed gross settlement and allowable/safe load by different method

Pile ID	Max^{m} Applied Load	Gross Settlement	Allowable/Safe Load Carrying Capacity in kg			
			BNBC	IS: 2911	Davisson	BSI
STP-07	225,000 kg	9.063 mm	>150,000	>150,000	N.A	N.A

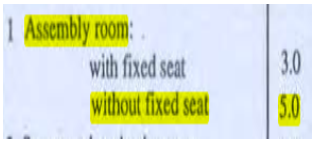
Ultimate pile capacity form pile load test report

Pile Cap Type	Pile Nos	Thickness	Ultimate Pile Capacity
	Nos	in	kip
PC2	2	35	300
PC2A	2	31	300
PC2B	2	35	300
PC3	3	31	300
PC3A	3	31	300

Structural system considered in EA

No.	Item	Load(Psf)
1	Mosque	63
2	Stair	105
3	Office	63
4	Toilet	42

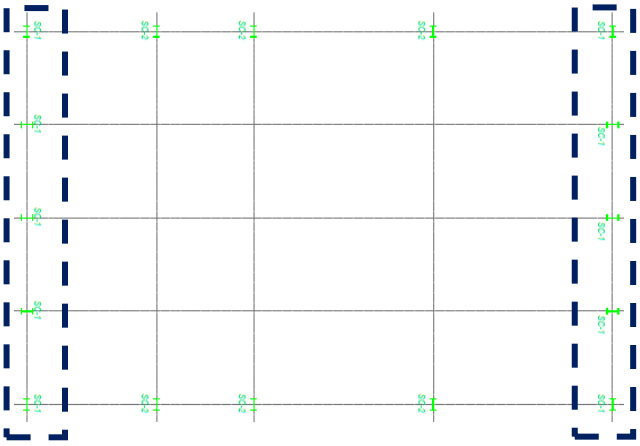
Live load consider in load plan



Minimum live load for assembly area in BNBC

Description: Several discrepancies were identified in the EA report. Concrete strength was considered as 3000 psi for piles, beams, and slabs, and 4000 psi for columns, shear walls, and pile caps; however, no test report was provided for this structure. The selected structural system (Dual System) was not justified. The ultimate pile capacity was taken as 300 tons, whereas the pile load test confirmed only 225 tons. In addition, the live load for the mosque was considered as 3 kPa, while BNBC specifies 5 kPa. The Building Engineer is required to verify the concrete strength by extracting a minimum of four cores from each type of structural element (columns and beam–slabs), update the EA in accordance with BNBC, address all identified inconsistencies, and submit the revised documents to RSC.

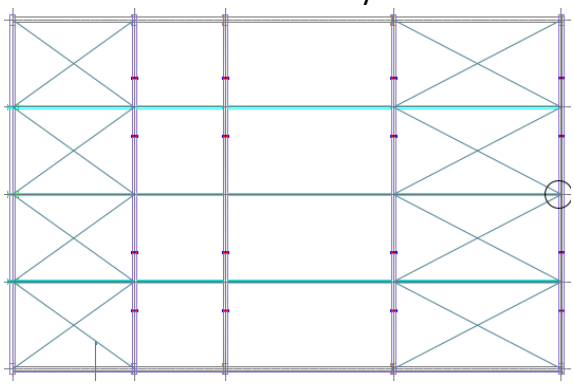
Observation-08: Discrepancies in as-built drawing (Building-3: Utility Shed).



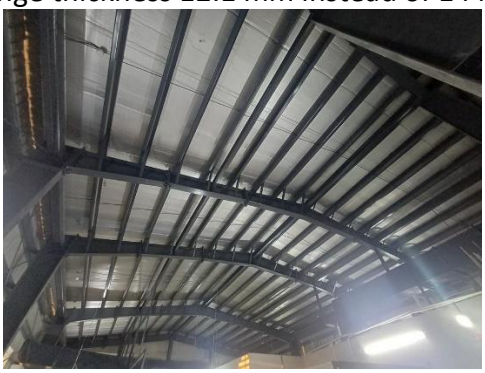
Steel column Layout

SC-01	200x14	400x8

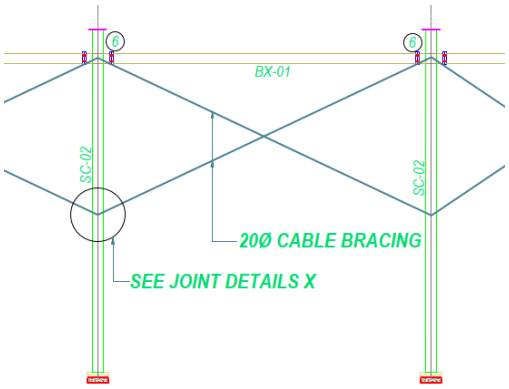
Flange thickness 12.1 mm instead of 14 mm



Roof Bracing Layout



Roof bracing missing

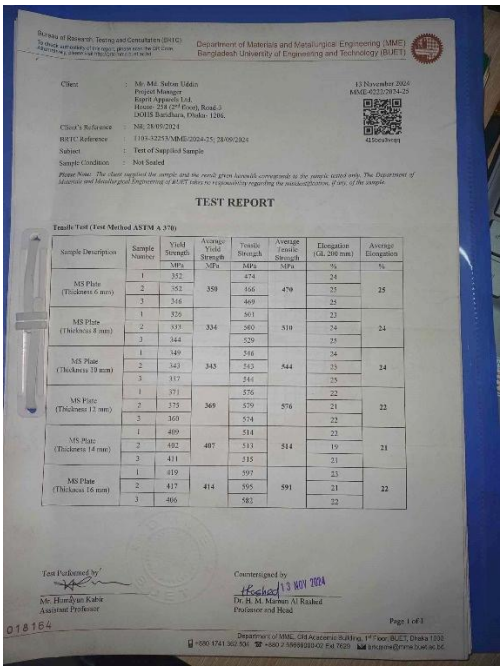


Rod bracing instead of cable bracing

Description: Several discrepancies were identified, including mismatches in the flange thickness of steel columns, missing roof bracings, and the use of rod bracing instead of cable bracing. The building engineer is required to update the as-built drawing as per on-site condition.

Observation-09: Inconsistencies in the EA report (Building-3: Utility Shed).

Part	Yield strength (MPa)
Steel Column	345
Steel Beam	345



Department of Materials and Metallurgical Engineering (MME)
Bangladesh University of Engineering and Technology (BUET)

TEST REPORT

Tensile Test (Test Method ASTM A 370)

Sample Description	Sample Number	Yield Strength MPa	Average Yield Strength MPa	Tensile Strength MPa	Average Tensile Strength MPa	Elongation (GL 200 mm) %	Average Elongation %
MS Plate (Thickness 6 mm)	1	352	359	474	470	24	25
	2	352		466		25	
	3	368		469		25	
MS Plate (Thickness 8 mm)	1	326	334	501	510	23	24
	2	333		500		24	
	3	344		529		25	
MS Plate (Thickness 10 mm)	1	349	343	546	544	24	24
	2	343		543		23	
	3	337		544		25	
MS Plate (Thickness 12 mm)	1	371	369	576	576	22	22
	2	375		579		21	
	3	360		574		22	
MS Plate (Thickness 14 mm)	1	409	407	514	514	22	21
	2	402		513		19	
	3	411		515		21	
MS Plate (Thickness 16 mm)	1	419	414	597	591	23	22
	2	417		595		21	
	3	406		582		22	

Test Performed by
Mr. Hardyan Kabir
Assistant Professor

Countersigned by
13 NOV 2024
Dr. B. M. Mamun Al Rashid
Professor and Head

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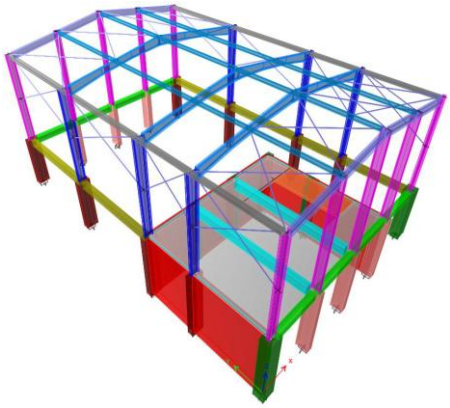
Page 1 of 1

Department of MME, Old Academic Building, 1st Floor, BUET, Dhaka 1000

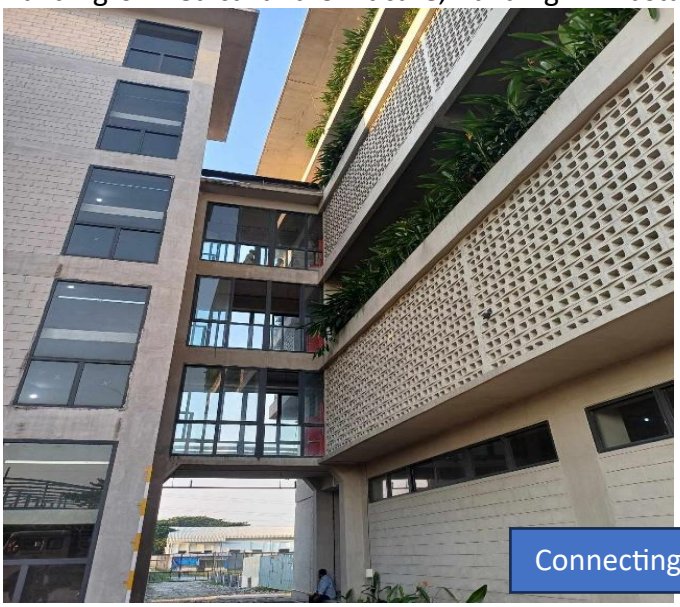
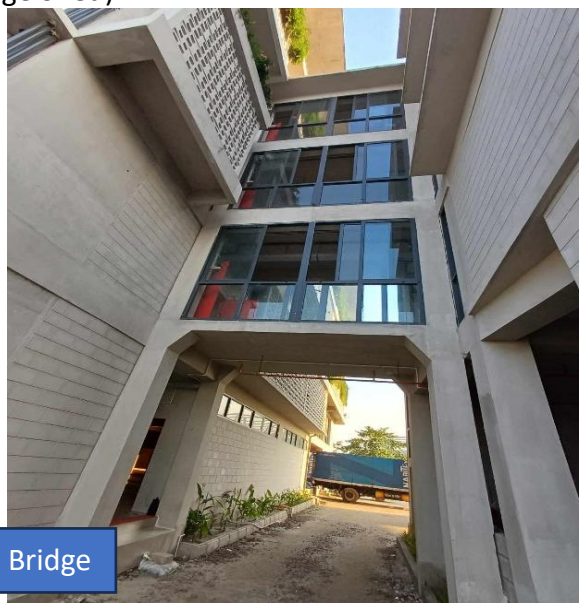
Yield strength was considered 345 MPa in EA, but test results for 8 mm and 10 mm plates were below this value



Roof bracing was considered in the EA, but was not provided at the site

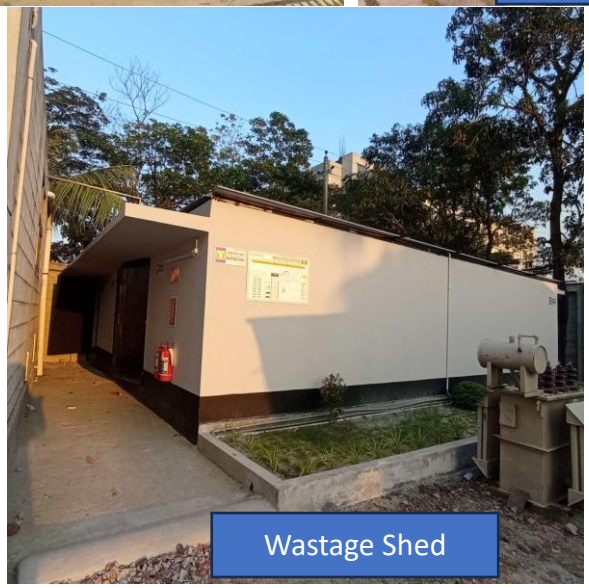
Description: Several inconsistencies were identified in the EA. Yield strength was considered as 345 MPa in the EA; however, test results for 8 mm and 10 mm plates were below this value. Roof bracing was also considered in the EA, but was not provided at the site. The Building Engineer is required to update the EA in accordance with BNBC, address all identified inconsistencies, and submit the revised documents to RSC.

Observation-10: Absence of design report. (Connecting Bridge, Building-5: Security Room, Building-6: Medical and Childcare, Building-7: Wastage Shed).



Connecting Bridge

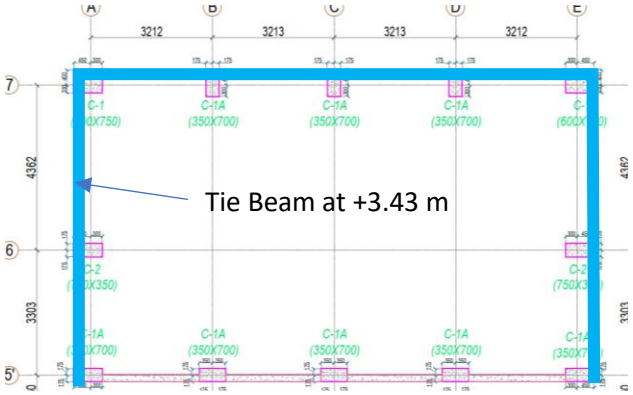

Security Room


Medical & Childcare


Wastage Shed

Description: As per BNBC, every building or structure designed shall have its design documents prepared following the provisions of Section 1.9.1. The design report was not available for the Factory Building. The building engineer is required to prepare a design report following BNBC (Part-6, section 1.9.1) and submit it to RSC for review against lateral forces.

Observation-11: Discrepancies in as-built drawing (Building-8: Boiler Building).



Tie Beam – not shown in drawing

Description: The tie beam layout is missing in the drawings. Additionally, the drawings for the Utility Shed and Boiler Building were prepared together, although the two structures are not connected structurally or architecturally. The Building Engineer is required to prepare separate drawings for each structure and update the drawings as per onsite conditions.

Observation-12: Inconsistencies in EA report (Building-8: Boiler Building).

Part	28 days cylinder strength (MPa)
Column	24
Beam	24
Footing	24

Concrete strength considered in EA

Description: Concrete strength was considered as 24 MPa, however, no test report was provided for this structure. The Building Engineer is required to verify the concrete strength by extracting a minimum of four cores from each type of structural element (columns and beam–slabs), update the EA in accordance with BNBC and submit the revised documents to RSC.

Observation-13: Lack of building permit from local authority (Building 3: Utility Shed, Building 8: Boiler Building)

Description: Building permit from local authority was not available for Building 3: Utility Shed, Building 8: Boiler Building. The building engineer is required to obtain building permit for both structures from local authority.

3. Action Plan

Item No	Observation	Action Plan	Timeline
1.	Stress in the column exceeds the normal design limit (Building-1: Production Building).	The building engineer is required to review the design, loads, and column stresses for the area identified above.	within 6 weeks
2.		Verify in-situ concrete strength by taking 4-100 mm diameter cores from the structural elements (Column, beam/slab).	within 6 weeks
3.		Produce and actively manage the loading plan	within 6 weeks
4.		Implement remediation work if required.	within 6 months
5.		Implement the load plan.	within 6 months
6.	Crack on the brick wall (Building-1: Production Building).	Repair the crack on the brick wall with a suitable method	within 6 weeks
7.	Crack on beam concrete cover (Building-1: Production Building).	The building engineer is required to investigate the crack surface of the beam and prepare an investigation report. Keep the investigation report onsite and repair the crack on the beam as per the investigation report.	within 6 weeks
8.	Possible vehicle impact on the ground floor (Building-1: Production Building).	The building engineer is required to provide an adequate barrier around all exposed columns to prevent vehicle impact.	within 6 weeks
9.	Falling hazard at roof level (Building-1: Production Building).	The building engineer is required to provide edge protection to avoid a falling hazard. Also, provide an adequate handrail on the steel ladder.	within 6 weeks
10.	Absence of design report. (Connecting Bridge)	The building engineer is required to prepare a design report following BNBC (Part-6, section 1.9.1) and submit it to RSC.	within 6 weeks
11.		Implement the recommendations of the design report.	within 6 months

12.	Discrepancies in as-built drawing (Building-2: Admin Building).	The building engineer is required to survey the structures and update the as-built drawing as per onsite condition	within 6 weeks
13.	Inconsistencies in the EA report (Building-2: Admin Building).	Verify in-situ concrete strength by taking 4-100 mm diameter cores from the structural elements (Column, beam/slab).	within 6 weeks
14.		Produce and actively manage the loading plan.	within 6 weeks
15.		The building engineer is required to update the EA in accordance with BNBC, address all identified inconsistencies, and submit the revised documents to RSC.	within 6 weeks
16.		Implement remediation work if required.	within 6 months
17.		Implement the load plan.	within 6 months
18.	Discrepancies in the as-built drawing (Building-3: Utility Shed).	The building engineer is required to survey the structures and update the as-built drawing as per onsite condition	within 6 weeks
19.	Inconsistencies in the EA report (Building-3: Utility Shed).	The Building Engineer is required to update the EA in accordance with BNBC, address all identified inconsistencies, and submit the revised documents to RSC.	within 6 weeks
20.		Implement remediation work if required.	within 6 months
21.	Absence of design report. (Building-5: Security Room)	The building engineer is required to prepare a design report following BNBC (Part-6, section 1.9.1) and submit it to RSC.	within 6 weeks
22.		Implement the recommendations of the design report.	within 6 months
23.	Absence of design report. (Building-6: Medical and Childcare)	The building engineer is required to prepare a design report following BNBC (Part-6, section 1.9.1) and submit it to RSC.	within 6 weeks
24.		Implement the recommendations of the design report.	within 6 months

25.	Absence of design report (Building-7: Wastage Shed)	The building engineer is required to prepare a design report following BNBC (Part-6, section 1.9.1) and submit it to RSC.	within 6 weeks
26.		Implement the recommendations of the design report.	within 6 months
27.	Discrepancies in as-built drawing (Building-8: Boiler Building).	The Building Engineer is required to prepare separate drawings for each structure and update the drawings as per onsite conditions.	within 6 weeks
28.	Inconsistencies in EA report (Building-8: Boiler Building).	Verify in-situ concrete strength by taking 4-100 mm diameter cores from the structural elements (Column, beam/slab).	within 6 weeks
29.		The building engineer is required to update the EA in accordance with BNBC and submit the revised documents to RSC.	within 6 weeks
30.		Implement remediation work if required.	within 6 months
31.	Lack of building permit from the local authority (Building 3: Utility Shed, Building 8: Boiler Building)	The building engineer is required to obtain a building permit for both structures from the local authority.	within 6 months