

Ananta Huaxiang Ltd. (Extension 2)

178 & 179, Adamjee EPZ, Siddirgonj, Narayanganj.

(23.6751118696267, 90.52359309858487)

13 October 2025

Structural Inspection Report



1. Building Information

1. Building-D
2. Building-E
3. Security & Fire Pump-D
4. Toilet Blocks (1 & 2)

2. Observation

Observation-01: Inconsistencies in the design report. (Building-D)

INPUT PARAMETERS of Earthquake for DEA:

Required value for Etabs Calculation (According code)	
BNBC 2020 Seismic Force-Resisting System	BNBC-2020 (User Coefficient) Special reinforced concrete moment frames
T	0.538
R	8
Ω	3
Cd	5.5
Ss	0.5
S1	0.2
Fa	1.35
Fv	2.7
Long Period Trans.	2
Z	0.2
Soil	SD
I	1

8.3.4 Flexural Members of Special Moment Frames

8.3.4.1 Scope

Requirements of this section shall apply to special moment frame members; (i) resisting earthquake induced forces, and (ii) proportioned primarily to resist flexure. These frame members shall also satisfy the following conditions. The requirements are also shown in Figure 6.8.1.

- Factored axial compressive force on frame member shall not exceed $0.1A_g f_c'$.
- Clear span for the member, l_n shall not be less than four times its effective depth.
- The width to depth ratio shall be at least 0.3.

4.1 Reference of soil test report & foundation Type:

Soil report is prepared by "Geotechnical Engineering Zone" and it proposed that shallow foundation may be made.

REPORT

EVALUATION OF BEARING CAPACITY

CLIENT ID: DHK 2774 -07/23

Table # 01: Bearing Capacities of the Shallow Foundation from FIELD TESTS (Values in MPa, F. S. = 2.50)

Bore Hole	Depth (m)	Field SPT	Bearing Capacity (MPa)	
			For Strip Footing	For Circular or Square Footing
01	1.5	Rubbish	-----	-----
	3.0	Rubbish	-----	-----
	4.5	2	0.087	0.104
04	1.5	4	0.052	0.060
	3.0	6	0.102	0.117
	4.5	5	0.109	0.127
05	1.5	Rubbish	-----	-----
	3.0	Rubbish	-----	-----
	4.5	4	0.100	0.117
08	1.5	5	0.057	0.065
	3.0	7	0.113	0.130
	4.5	5	0.109	0.127
10	1.5	5	0.057	0.065
	3.0	3	0.077	0.091
	4.5	4	0.100	0.117
11	1.5	5	0.057	0.065
	3.0	1	0.070	0.083
	4.5	2	0.087	0.104
12	1.5	Rubbish	-----	-----
	3.0	Rubbish	-----	-----
	4.5	1	0.084	0.100
13	1.5	5	0.057	0.065
	3.0	1	0.070	0.083
	4.5	4	0.100	0.117

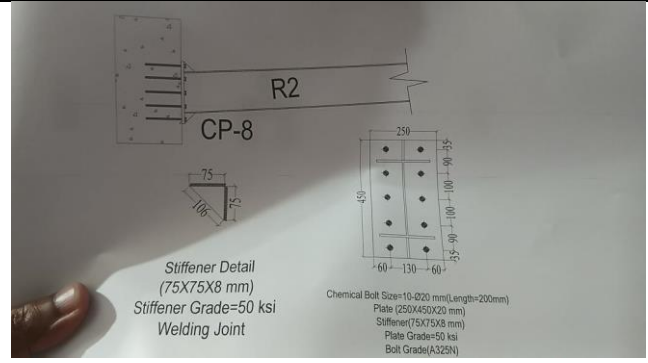
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Description: During the inspection, the design report was found on-site, and the following observations were noted:

- The response modification coefficient, R, has been taken as 8, which is referred to as Special Reinforced Concrete Moment (SMRF). The factory is required to meet the requirements with BNBC 2020 articles 8.3.4, 8.3.5, 8.3.7 and 8.3.8. Also, the roof framing is steel while the lower stories (Ground Floor to 2nd) are reinforced concrete, the Building Engineer is required to justify the R value, addressing composite behaviour, ductility and detailing requirements.
- The structural system is reported as a Special Moment Resisting Frame. However, no joint shear (beam-column joint) checks have been provided.
- No torsional irregularity check has been provided.
- No foundation adequacy check was provided.

The building engineer is required to address all the inconsistencies in the revised EA report and submit the revised EA to RSC.

Observation-02: improper connection at steel rafter to RC column (Building-D)



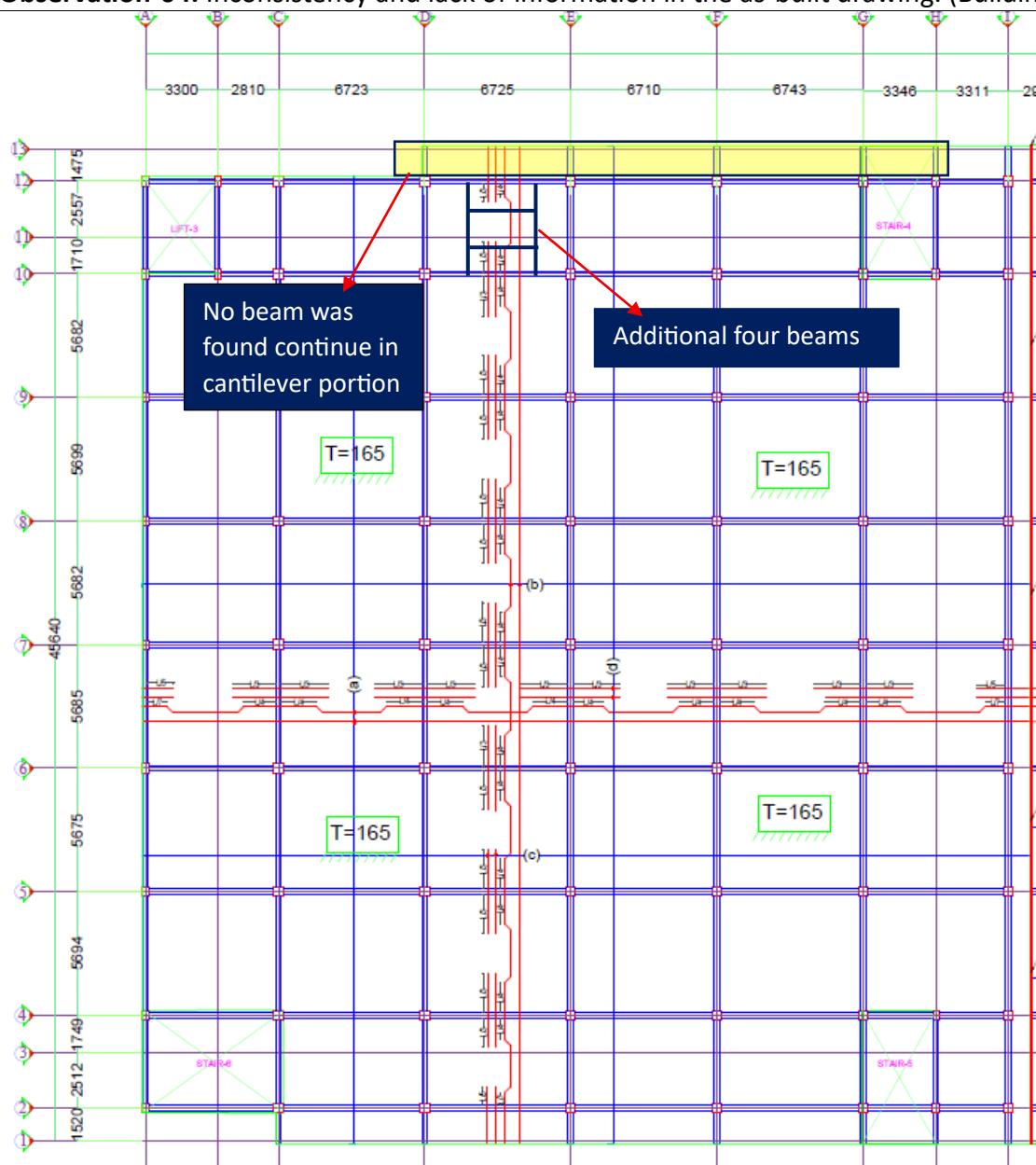
Description: Improper connection observed between the steel rafter and the RC column. The Building Engineer is required to implement the connection as per the as-built drawings, check the adequacy of the connection, and include the adequacy check in the EA report.

Observation-03: Loading on the 2F (Building D).



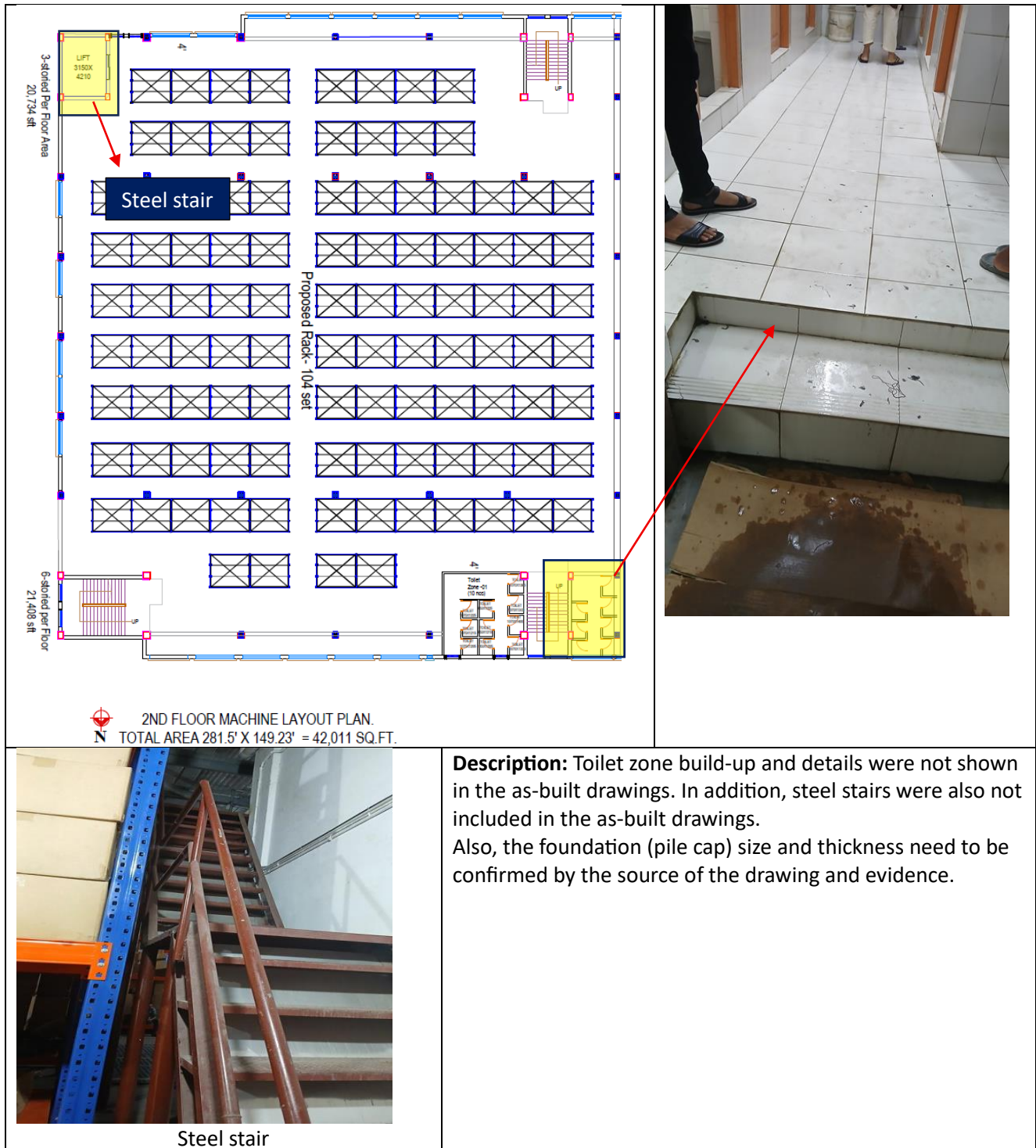
Description: Loading was found around 6 kPa on the 2F. Building engineer is required to prepare an interim load plan and maintain loading below 6 kPa. Also, implement a floor load management system. (Height marking, Signage).

Observation-04: Inconsistency and lack of information in the as-built drawing. (Building-D)



GROUND FLOOR ROOF REINFORCEMENT DETAIL

Description: During the inspection, no beam was found in the cantilever portion, and four additional beams were found at the GF roof.



Observation-05: Dampness on a brick wall (Building D)	
	Description: During the inspection, Dampness was found on the brick wall. The building engineer is required to repair the dampness with a suitable method.

Observation-06: Storage racks found unbraced/not anchored. (Building D)	
	
Description: Storage racks were found unbraced/unanchored. The building engineer is required to brace/anchor all non-structural elements.	

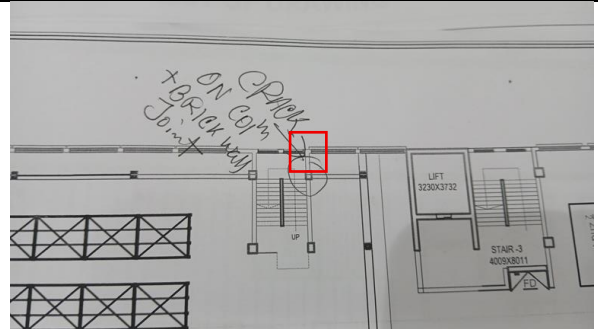
Observation-07: Corrosion on steel members. (Building D)	
	Description: Corrosion was observed on the steel members of the roof shed. The building engineer is required to remove the corrosion with a suitable method and provide anti-corrosive coating.

Observation-08: Connection gap between steel plates. (Building D)



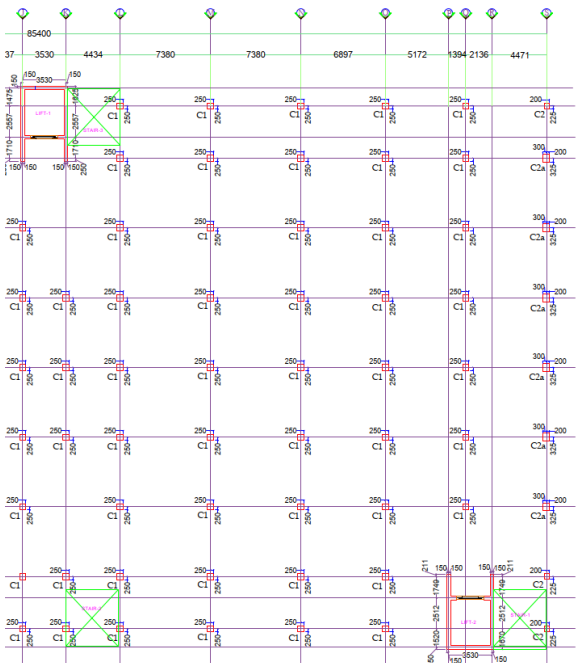
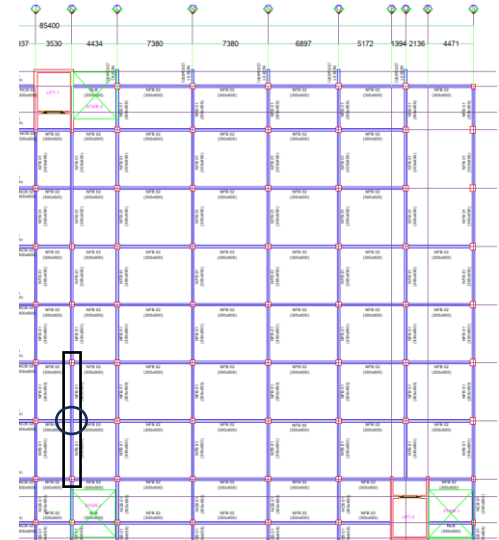
Description: Connection gaps were found in the roof shed areas. The building engineer is required to repair the gaps with a suitable method and ensure adequate strengthening where necessary.

Observation-09: Crack on column and brick wall joint. (Building D)

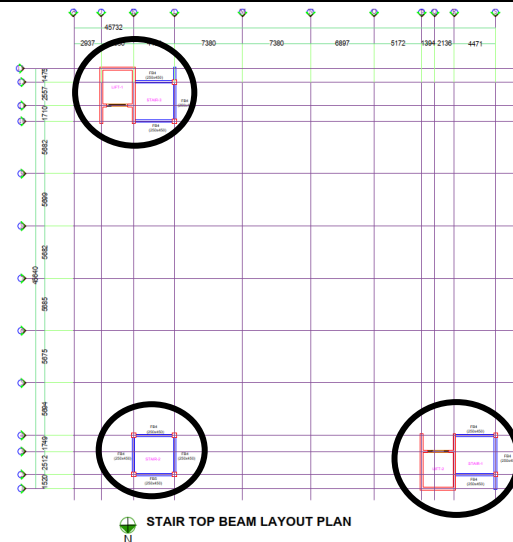
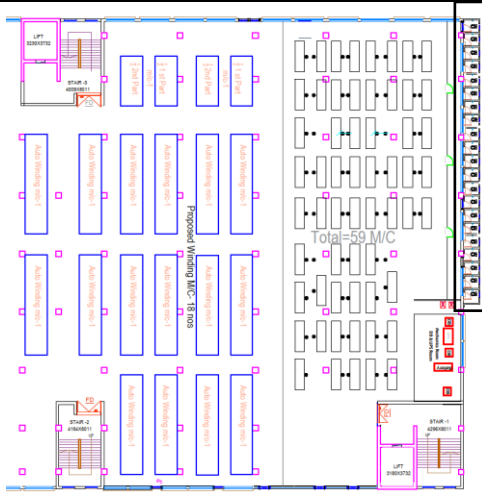


Description: Cracks were observed on the column and the brick wall joint. The building engineer is required to investigate the reason for the crack and repair it with a suitable method.

Observation 10: Column stressed above the normal design limit. (Building E)

	 
Column layout plan	Warehouse loading
Description: cursory calculations indicate that columns are stressed above the normal design limit, considering the observed live loads of 4 kPa for the typical production area & 6 kPa for the store area, with a minimum concrete strength based on the aggregate type. Building engineer is required to review the design, load, and column stress. Also, a beam was found 11.2 m due to the omission of a column. Building engineer is required to review the design of the beam.	

Observation 11: Inconsistency in the as-built drawing. (Building E)



Description: Inconsistency observed in the beam layout, lack of information in the as-built drawing (False slab, cantilever details), and details of the shear walls are missing.

Observation-12: Loading on the 4F. (Building E)



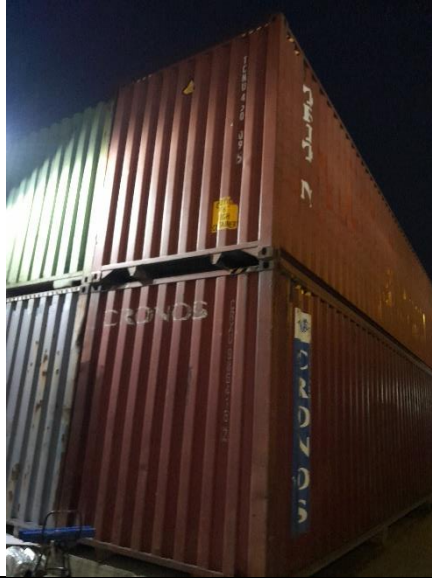
Description: Loading was found slightly above 6 kPa on the 4F. Building engineer is required to prepare an interim load plan and maintain loading below 4 kPa. Also, implement a floor load management system. (Height marking, Signage).

Observation-13: Anchorage of non-structural elements. (Building E)



Description: Anchorage not found on the storage racks. Building engineer is required to provide anchorage to the non-structural elements.

Observation-14: Lack of anchorage between the containers and the lack of base anchorage.
(Containers)



Description: Containers are not interconnected, also anchorage is not provided in the base; these containers are prone to seismic hazards. building engineer is required to review the seismic hazard requirements in the containers and implement remediations.

Observation-15: Lack of design report. (Security and Fire Pump-D)



Description: Design report was not prepared for the Security and Fire Pump Room. Building engineer is required to prepare the design report as per BNBC 1.9.1.

3. Action Plan

Item No	Observation	Action Plan	Timeline
1.	Inconsistencies in the design report. (Building-D)	The building engineer is required to address all the inconsistencies in the revised EA report and submit the revised EA to RSC.	within 6 weeks
2.		Carry out suggested remedial works if required.	within 6 months
3.	Improper connection at the steel rafter to the RC column (Building-D)	The Building Engineer is required to implement the connection as per the as-built drawings, check the adequacy of the connection and include the adequacy check in the EA report.	within 6 weeks
4.	Loading on the 3F (Building D).	Building engineer is required to prepare an interim load plan and maintain loading below 6 kPa.	within 6 weeks
5.		Implement a floor load management system. (Height marking, Signage).	within 6 weeks
6.	Inconsistency and lack of information in the as-built drawing. (Building-D)	The Building Engineer is required to confirm the source of the drawings to ensure the accuracy of foundation size and thickness, survey the structures, and prepare comprehensive as-built drawings.	within 6 weeks
7.	Dampness on a brick wall (Building D)	The building engineer is required to repair the dampness with a suitable method.	within 6 weeks
8.	Storage racks found unbraced/not anchored. (Building D)	Storage racks were found unbraced/unanchored. The building engineer is required to brace/anchor all non-structural elements.	within 6 months
9.	Corrosion on steel members. (Building D)	The building engineer is required to remove the corrosion with a suitable method and provide anti-corrosive coating.	within 6 weeks
10.	Connection gap between steel plates. (Building D)	The building engineer is required to repair the gaps with a suitable method and ensure adequate strengthening where necessary.	within 6 weeks
11.	Crack on the column and the brick wall joint. (Building D)	The building engineer is required to investigate the reason for the crack and repair it with a suitable method.	within 6 weeks

12.	Column stressed above the normal design limit. (Building E)	Building engineer is required to review the design, load and column stress.	within 6 weeks
13.		Verify in situ concrete strength by taking 4 no. concrete cores from the lower-tier columns. As the existing cylinder test reports do not meet the BNBC 5.12.1 requirements.	Immediate
14.		Building engineer is required to review the design of the beam.	within 6 weeks
15.		Building engineer is required to prepare the EA as per the requirements of the BNBC 1.9.1.	within 6 weeks
16.		Carry out suggested remedial works if required.	within 6 months
17.	Inconsistency in the as-built drawing. (Building E)	The building engineer is required to survey the full structure and prepare accurate as-built drawings based on the actual construction.	within 6 weeks
18.	Loading on the 4F. (Building E)	Building engineer is required to prepare an interim load plan and maintain loading below 4 kPa on the 4F.	within 6 weeks
19.		Implement a floor load management system. (Height marking, Signage).	within 6 weeks
20.	Anchorage of non-structural elements. (Building E)	The building engineer is required to anchor or brace all non-structural elements.	within 6 weeks
21.			
22.	Lack of anchorage between the containers and the lack of base anchorage. (Container)	Building engineer is required to review the seismic hazard requirements in the containers and implement remediations.	within 6 weeks
23.		Carry out the suggested remedial works if required or remove the top containers.	within 6 months
24.	Lack of design report. (Security and Fire Pump-D)	Building engineer is required to prepare the design report as per BNBC 1.9.1.	within 6 weeks
25.		Carry out the suggested remedial works if Required or remove the top containers.	within 6 months

Survey Limitations and Assumptions

This report is for the private and confidential use of RSC for whom it was prepared, together with their professional advisors as appropriate. It should not be reproduced as a whole or in part or relied upon by third parties for any use without the express written permission of RSC.

This report can be used in discussion with the supplier or factory owner as a means to rectify or address any observations made. The report is not comprehensive and is limited to what could be observed during a visual inspection of the building.

This Report is not intended to be treated as a generalized inspection and does not cover the deterioration of structural members through dampness, fungal or insect attack, nor does it deal with problems and defects of a non-structural nature. Other non-structural aspects of the building, such as fire safety, have not been assessed in this survey.

Except as otherwise noted, drains and other services were not viewed or tested during our inspection and are therefore similarly excluded from this Report. We have not inspected any parts of the structure that are covered, unexposed, or inaccessible, and we are therefore unable to report that any such part of the property is free from defect.

External inspection of the façade walls has generally been carried out from ground level only by visual sighting. No opening-up works were carried out (except as noted), and we rely on the Architect's and Engineer's drawings provided for us for our views on concealed parts of the structure and, in particular, foundations. The strengths of materials and components are untested, and we recommend that the factory owners' Building Engineer carry out in situ testing over and above those suggested to satisfy themselves with the material strengths and component details.

Recommendations, where given, are to provide indicative advice only, are not exhaustive, relate solely to identifying key and obvious structural defects as identified in this presentation, and do not take the form of or constitute a specification for works. We take no responsibility for the construction. This report does not interfere with the factory owner's Building Engineer's responsibility for the structural performance of this building. The Building Engineer remains fully responsible for the structural adequacy of the building.

This report does not comment in detail on the future seismic performance of the building and only highlights the fact that the building may experience significant damage or collapse in a seismic event, along with many others in the Dhaka region.

The observations in this report are based on the Engineering Judgement of the lead surveyor/engineer at the time of the survey. We assume in making these observations that no covering up of faults, defects, filling or plastering over cracking, or significant repair work has been carried out by the building owner. Any future alteration or additional work by the building owner will void this report.