

Impress Printing & Embroidery

90/1, Joy Bangla Road, Ward #40, Meghdubi, Pubail, Gazipur, Bangladesh

Geographic Coordinates: 23.93866N, 90.42921E

5 October 2023



Building Information

Shed-1 (Production Shed): Single storey steel shed with a mezzanine floor.

Shed-2 (Maintenance): Single storey steel shed.

Shed-3 (Centeen): Single storey steel shed.

Shed-4 (ETP): Single storey steel shed.

Shed-5 (Screen Shed): Single storey steel shed.

Building-1 (Utility): Single storied reinforced concrete (RC) building.

Building-2 (Medical): Single storied reinforced concrete (RC) building.

Observations

Lack of building permit



There were no building permit drawings for any structure. The factory is required to collect building permit from government approved local authority.

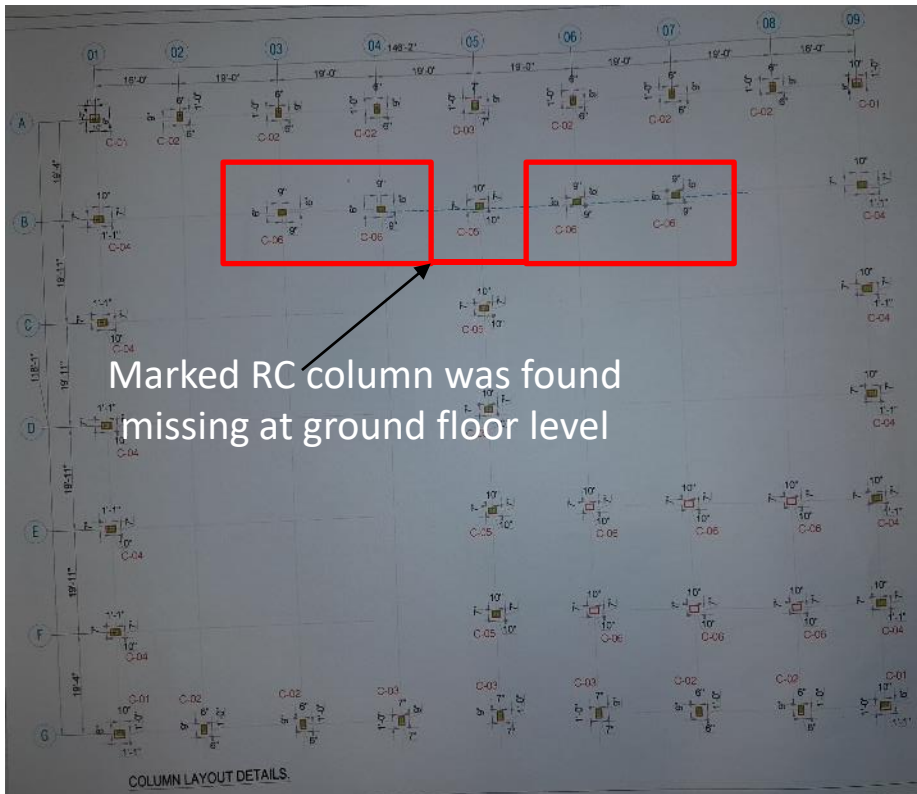
Lack of lateral stability



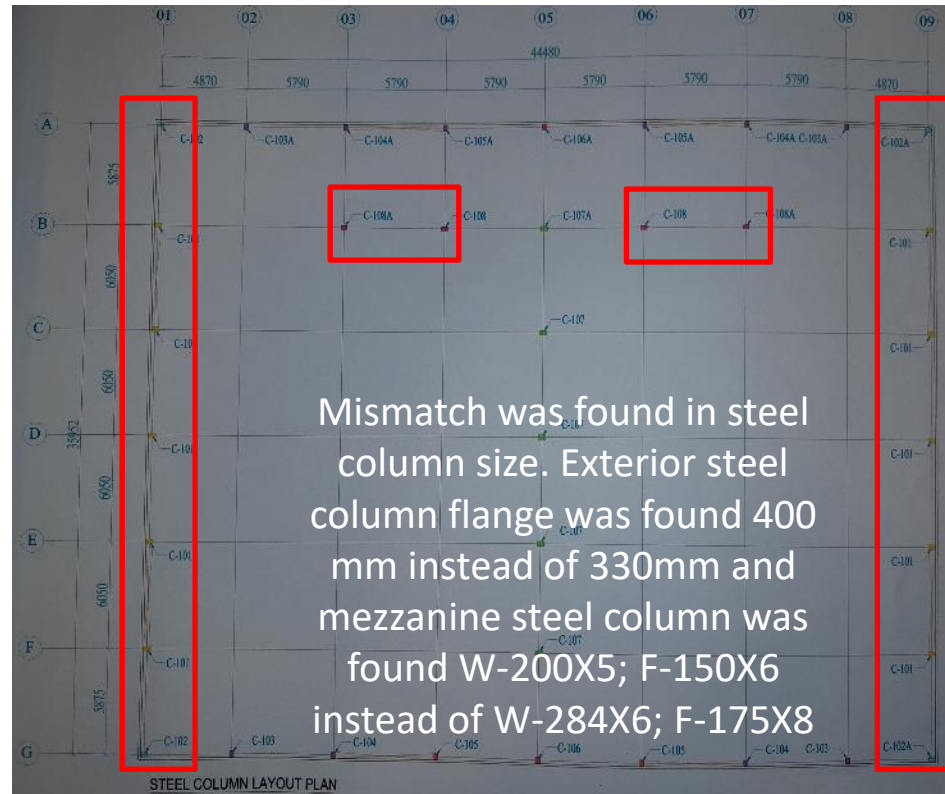
Absence of load transfer media (compression strut) along transverse direction of rafter and absence of bracing both at sidewall & roof

Lack of lateral stability system (bracing & compression strut) was observed in the structure. The building engineer is required carryout Engineering Assessment (EA) to check the lateral stability of the structure and suggest proper remedial actions accordingly. Submit the EA documents to the RSC for review.

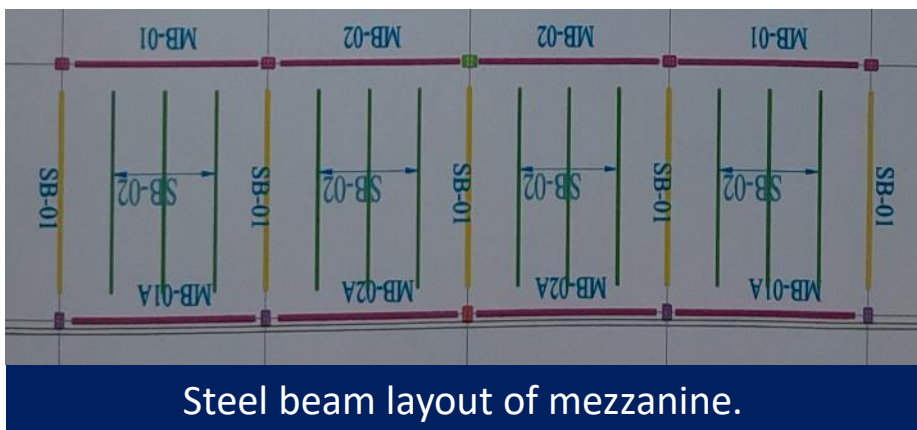
Mismatches between construction drawing and as-built condition



RC Column layout



Steel Column layout



During inspection, mismatch was found between onsite condition and as-built drawing. Marked RC column was found missing at ground floor, some steel column size was found oversized and undersized, and mismatch was found in steel beam size at mezzanine floor. The building engineer is required to survey the full structure and produce accurate as-built drawings.

Connection gap in baseplate and rafter-column joint plate



Gap between rafter and steel column joint



Gap between baseplate & pedestal joint

Considerable gap between rafter and steel column joint and also under the steel baseplate was observed. The factory is required to take necessary action to fill the gap in connection as per the suggestion of building engineer.

Distorted steel column of mezzanine

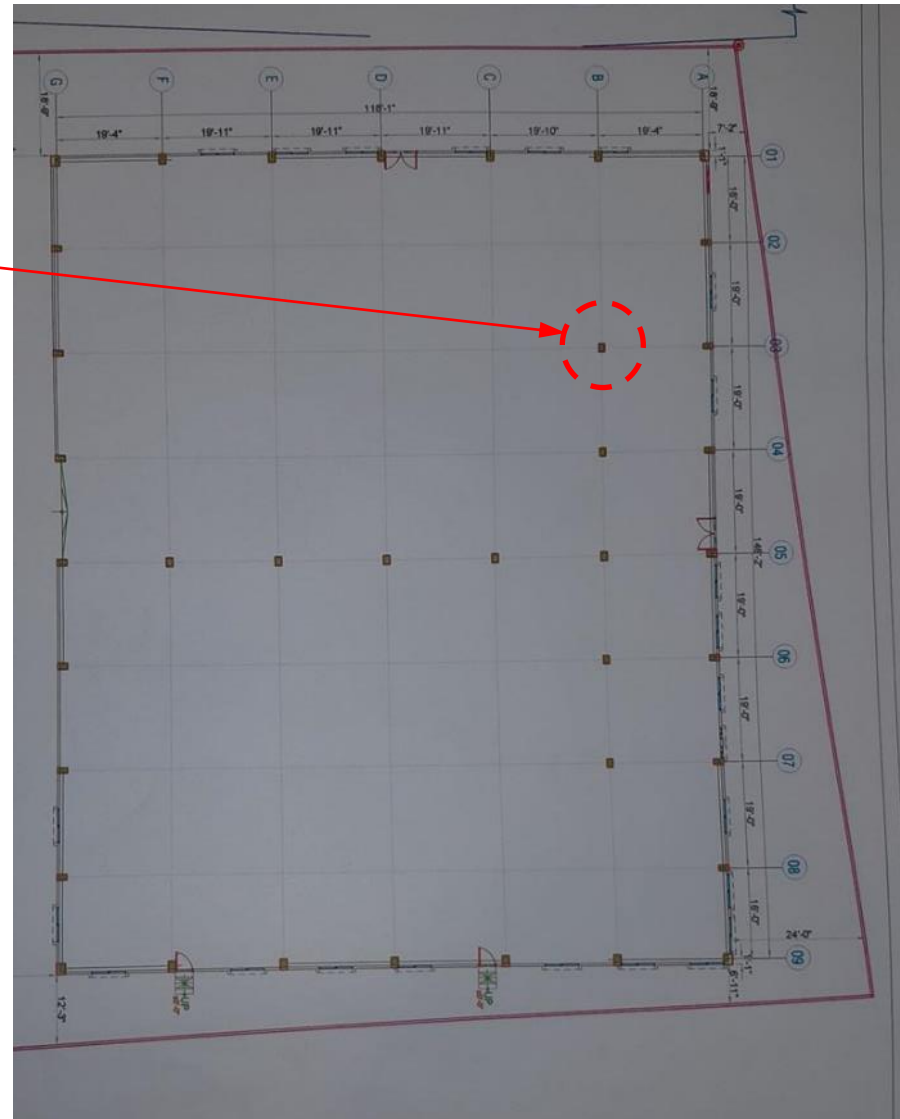


Distorted steel column



Distorted steel beam-column joint

Steel column of mezzanine floor at south-east corner is distorted. The connection between that column and steel beam also seems inadequate. The building engineer is required to investigate the reason of such distortion and take necessary action for remedial procedure.



Inadequate slab thickness and vibration in mezzanine floor



Mezzanine floor slab thickness

Slab thickness of mezzanine floor is found 75 mm. This thickness seems to be inadequate. Also, there is considerable vibration on the floor. The building engineer is required carryout Engineering Assessment (EA) to check the adequacy of the slab in terms of stress & serviceability issues and suggest proper remedial actions accordingly. Submit the EA documents to the RSC for review.

Apparently non-engineered steel stair



Steel stair and connections

The building engineer is required carryout Engineering Assessment (EA) to check the lateral stability of the steel stair, check adequacy of steel members & connections and suggest proper remedial actions accordingly. Submit the EA documents to the RSC for review.

Falling hazard at mezzanine Floor



No barrier at mezzanine floor

The factory is required to provide adequate barrier to avoid possible falling hazards.

Lack of as-built drawings



Shed-2

During inspection, as built drawing was not found. Building engineer is required to prepare as-built drawings.

Lack of anchorage for uplift forces



Lack of anchorage for uplift forces

Building engineer is required to check the connection between the steel rafter and brick wall for uplift forces. Take necessary remedial actions as per the suggestion of building engineer.

Lack of as-built drawings



Shed-3

During inspection, as built drawing was not found. Building engineer is required to prepare as-built drawings of the structure.

Observation: Shed-3 (Canteen)

Lack of anchorage for uplift forces



Lack of anchorage for uplift forces

Building engineer is required to check the connection between the steel rafter and brick wall for uplift forces. Take necessary remedial actions as per the suggestion of building engineer.

Lack of as-built drawings & connection details



Shed-4



rafter and steel column connection

During inspection, as built drawing was not found. Building engineer is required to prepare as-built drawings with connection details.

Lack of as-built drawings



During inspection, as built drawing was not found. Building engineer is required to prepare as built drawings of the structure.

Lack of anchorage for uplift forces



Lack of anchorage for uplift forces

Building engineer is required to check the connection between the steel rafter and brick wall for uplift forces. Take necessary remedial actions as per the suggestion of building engineer.

Lack of as-built drawings

Observation: Building-1 (Utility)



Building-1

As-built drawing was not found on-site. Building engineer is required to survey the structure and prepare as built drawings with foundation details.

Improper connection between lintel & column

Observation: Building-1 (Utility)



Hairline crack at the lintel-column joint over the door

The factory is required to take necessary remedial actions as per the suggestion of building engineer.

Observation: Building-1 (Utility)

Exposed rebar at roof



Exposed rebar on roof

Exposed rebar observed on roof which is prone to corrosion. The factory is required to provide anti-corrosive coating on the exposed rebar.

Observation: Building-1 (Utility)

Lack of lateral bracing for rooftop water tanks



Water tank on the roof has no lateral brace

The factory is required to provide lateral bracing for water tanks to resist seismic forces.

Lack of design documents

Observation: Building-2 (Medical)



As per BNBC, every building or structure designed shall have its design documents prepared in accordance with the provision of Section 1.9.1, part-6 of BNBC. The design document shall include a design report, and a set of structural drawings, which shall be prepared in compliance with section 1.9.1.1 and section 1.9.1.2 as per BNBC. During inspection design report was not found which is required to be prepared in compliance with section 1.9.1.1 (part-6, BNBC).

Observation: Building-2 (Medical)

Exposed rebar at roof

Observation: Building-2 (Medical)



Exposed rebar observed on roof which is prone to corrosion. The factory is required to provide anti-corrosive coating on the exposed rebar.

Observation: Building-2 (Medical)

Lack of lateral bracing for rooftop water tanks

Observation: Building-2 (Medical)



Water tank on the roof has no lateral brace

The factory is required to provide lateral bracing for water tanks to resist seismic forces.

Observation: Building-1 (Utility)

Problems Observed

All structures:

Item 01: Lack of building permit from local authority.

Shed-1 (Production Shed):

Item 02: Lack of lateral stability.

Item 03: Mismatches between construction drawing and as-built condition.

Item 04: Connection gap in baseplate and column-rafter joint plate.

Item 05: Distorted steel column of mezzanine.

Item 06: Inadequate slab thickness and vibration in mezzanine floor.

Item 07: Apparently non-engineered steel stair.

Item 08: Falling hazard at mezzanine floor.

Shed-2 (Maintenance):

Item 09: Lack of as-built drawings.

Item 10: Lack of anchorage for uplift forces.

Problems Observed (Continued)

Shed-3 (Canteen):

Item 11: Lack of as-built drawings.

Item 12: Lack of anchorage for uplift forces.

Shed-4 (ETP):

Item 13: Lack of as-built drawings & connection details.

Shed-5 (Screen Shed):

Item 14: Lack of as-built drawings.

Item 15: Lack of anchorage for uplift forces.

Building-1 (Utility):

Item 16: Lack of as-built drawings.

Item 17: Improper connection between lintel & column.

Item 18: Exposed rebar at roof.

Item 19: Lack of anchorage of non-structural elements.

Problems Observed (Continued)

Building-2 (Medical):

Item 20: Lack of design document.

Item 21: Exposed rebar at roof.

Item 22: Lack of anchorage of non-structural elements.

Priority Actions

Item No.	Observation	Recommended Action Plan	Recommended Timeline
01	Lack of building permit from local authority (All Buildings)	Factory is required to collect building permit from government approved local authority.	6-months
02	Lack of lateral stability. Shed-1 (Production Shed)	The building engineer is required to carryout Engineering Assessment (EA) to check the lateral stability of the structure and suggest proper remedial actions accordingly. Submit the EA documents to the RSC for review.	6-weeks
03	Lack of lateral stability. Shed-1 (Production Shed)	Carry out suggested remedial work.	6-months
04	Mismatches between construction drawing and as-built condition. Shed-1 (Production Shed)	The building engineer is required to survey the structure and produce accurate as-built drawings.	6-weeks
05	Connection gap in baseplate and column-rafter joint plate. Shed-1 (Production Shed)	The factory is required to take necessary action to fill the gap in connection as per the suggestion of building engineer.	6-weeks
06	Connection gap in baseplate and column-rafter joint plate. Shed-1 (Production Shed)	Carry out suggested remedial work.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
07	Distorted steel column of mezzanine. Shed-1 (Production Shed)	Factory is required to investigate the reason of column distortion and take necessary action for remediation as per the suggestion of building engineer.	6-weeks
08	Distorted steel column of mezzanine. Shed-1 (Production Shed)	Carry out suggested remedial work.	6-months
09	Inadequate slab thickness and vibration in mezzanine floor. Shed-1 (Production Shed)	The building engineer is required carryout Engineering Assessment (EA) to check the adequacy of the slab in terms of stress & serviceability issues and suggest proper remedial actions accordingly. Submit the EA documents to the RSC for review.	6-weeks
10	Inadequate slab thickness and vibration in mezzanine floor. Shed-1 (Production Shed)	Carry out suggested remedial work.	6-months
11	Apparently non-engineered steel stair. Shed-1 (Production Shed)	As part of EA, the building engineer is required to check the lateral stability of the steel stair, check adequacy of steel members & connections and suggest proper remedial actions accordingly.	6-weeks
12	Apparently non-engineered steel stair. Shed-1 (Production Shed)	Carry out remedial works if required.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
13	Falling hazard at mezzanine floor. Shed-1 (Production Shed)	The factory is required to provide adequate barrier to avoid possible falling hazards.	6-weeks
14	Lack of as-built drawings. Shed-2 (Maintenance)	The building engineer is required to prepare as built drawings. Submit the documents to the RSC for review.	6-weeks
15	Lack of anchorage for uplift forces. Shed-2 (Maintenance)	Provide necessary anchorage between roof & walls.	6-months
16	Lack of as-built drawings. Shed-3 (Canteen)	The building engineer is required to prepare as-built drawings.	6-weeks
17	Lack of anchorage for uplift forces. Shed-3 (Canteen)	Provide necessary anchorage between roof & walls.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
18	Lack of as-built drawings & connection details. Shed-4 (ETP)	The building engineer is required to prepare as built drawings with connection details.	6-weeks
19	Lack of as-built drawings. Shed-5 (Screen Shed)	The building engineer is required to prepare as built drawings.	6-weeks
20	Lack of anchorage for uplift forces. Shed-5 (Screen Shed)	Provide necessary anchorage between roof & walls.	6-months
21	Lack of as-built drawings. Building-1 (Utility)	Building engineer is required to survey the structure and prepare as built drawings with foundation details.	6-weeks
22	Improper connection between lintel & column. Building-1 (Utility)	The factory is required to take necessary remedial actions as per the suggestion of building engineer.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
23	Exposed rebar at roof. Building-1 (Utility)	The factory is required to provide anti-corrosive coating on the exposed rebar.	6-months
24	Lack of anchorage of non-structural elements. Building-1 (Utility)	The factory is required to provide lateral bracing for water tanks to resist seismic forces.	6-months
25	Lack of design document. Building-2 (Medical)	The building engineer is required to prepare design documents in compliance with section 1.9.1.1 (part-6, BNBC).	6-weeks
26	Lack of design document. Building-2 (Medical)	Carry out remedial works if required.	6-months
27	Exposed rebar at roof. Building-2 (Medical)	The factory is required to provide anti-corrosive coating on the exposed rebar.	6-months
28	Lack of anchorage of non-structural elements. Building-2 (Medical)	The factory is required to provide lateral bracing for water tanks to resist seismic forces.	6-months