

Ahsan Composite Ltd. (Extension)

Ward no-07, Holding no-99/D, Chandra Pollibidyut Road, Kaliakoir, Gazipur
(24.044005199, 90.259546481)

30 November 2023



1. Building Information

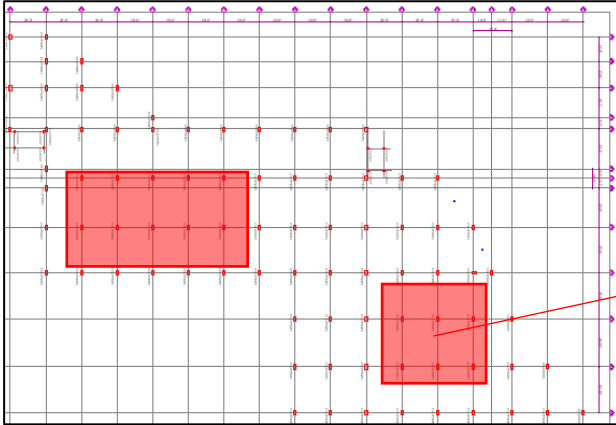
Building 07 (Production Building): Three (G+M+2) storied steel building with mezzanine floor at south-east side of ground floor.

Building 11 (Dyes Chemical Store): Five storied (G+4) reinforced concrete (RC) structure.

Building-12 (Dining & Canteen): Single storied steel shed.

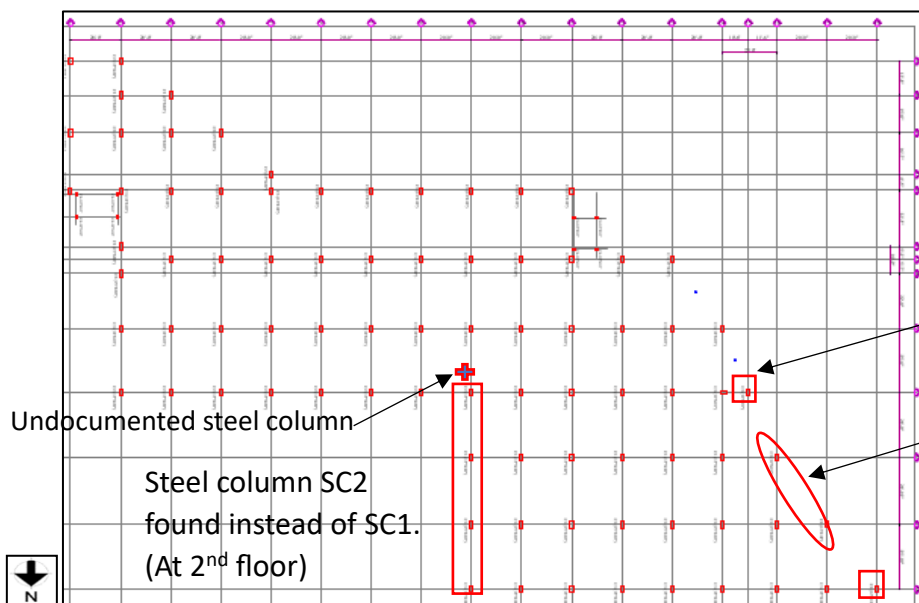
Observations

Observation-1: Steel columns are stressed above normal design limit. [Building-07 (Production Building)]



Description: Cursory calculation indicates that the marked area appears to be stressed above normal design limits based on prepared live load plan (3 kPa for typical and 6 kPa for storage) and minimum steel plate strength (250 MPa). Also, foundation details and geotechnical investigation report were not found onsite. The building engineer is required to carry out Detail Engineering Assessment (DEA) to review the design, loads and column stress based on in-situ material strength and floor live loads.

Observation-2: Incomplete drawing. [Building-07 (Production Building)]



Steel column SC3 found instead of (200x400) mm instead of (200x260) mm. (At 2nd floor)

Steel column SC1 found instead of SC3. (At 2nd floor)



Steel column SC1 found instead of SC3. (At 2nd floor)
(280x550) mm



Steel column SC3 found
(200x400) mm instead of
(200x260) mm. (At 2nd floor)



Steel column SC2 found instead of SC1. (At 2nd floor)

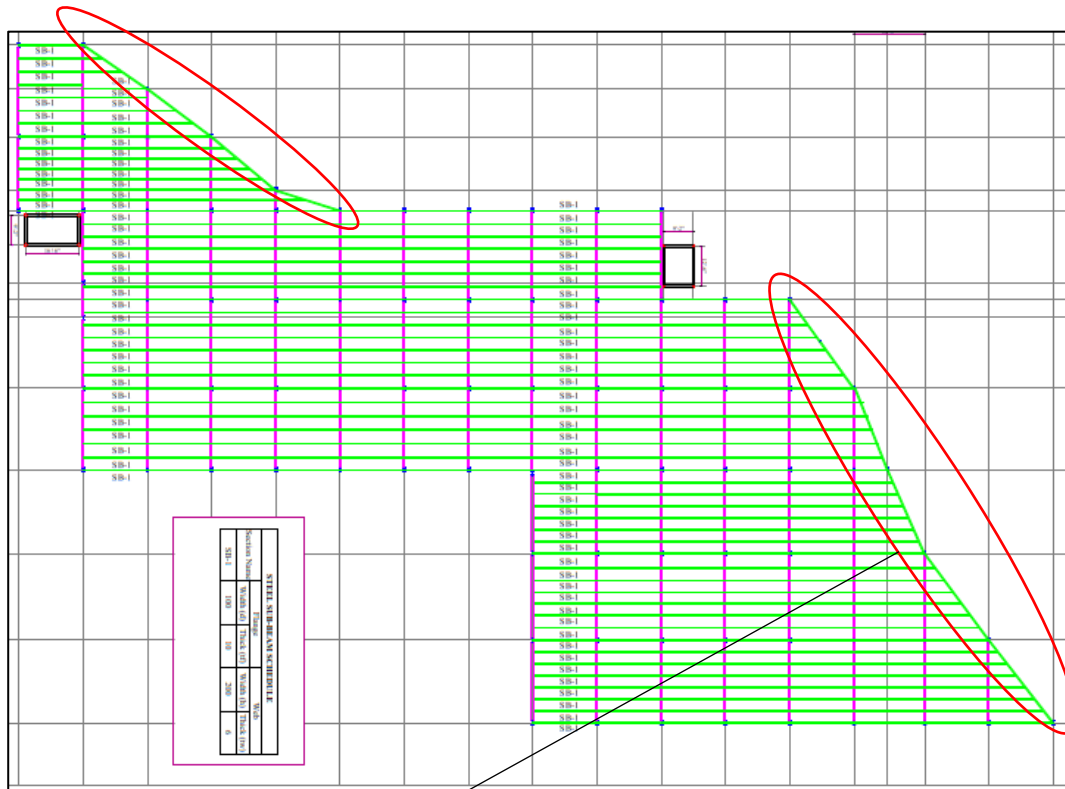


Undocumented steel column



COLUMN SCHEDULE				
Section Name	Flange		Web	
	Width (d)	Thick (tf)	Width (h)	Thick (tw)
SC-1	280	12	550	8
SC-2	200	12	400	8
SC-3	200	12	260	8

SC3 found 250x360 instead of 200x260. (At ground floor)



Marked beam details not shown in drawing (180x400) mm



Sub beam size was found (125x350) mm instead of (100x200) mm

STEEL SUB-BEAM SCHEDULE				
Section Name	Flange		Web	
	Width (d)	Thick (tf)	Width (h)	Thick (tw)
SB-1	100	10	200	6

Sub beam schedule



Frame section missing in the prepared drawing



Welding connection



Undocumented pipe column at ground floor

Description: During inspection, a set of structural drawings was found on site.

- No foundation information was provided in the drawing.
- Mismatch was found in the column layout and column schedule.
- Mismatch was found in beam layout and beam schedule.
- Mismatch found in connection details.

The building engineer is required to survey the full structure and prepare complete as-built drawing.

Observation-3: Lack of drainage system on roof. [Building 07 (Production Building)]



Description: During the inspection, a poor roof drainage system and signs of water stagnant were found on the roof. The building engineer is required to improve the water drainage system on the roof with proper slope & adequate number of water outlets.

Observation-4: Missing bolt at several places. [Building 07 (Production Building)]



Description: During inspection, missing bolts were observed in connection at several places. The building engineer is required to identify all the missing bolts and install bolts in all missing areas.

Observation-5: Corrosion in steel member. [Building 07 (Production Building)]



Description: During inspection, corrosion was observed in steel members at several places. The building engineer is required to identify all the corroded members, remove all corrosion, and apply anti-corrosive coating.

Observation-6: Significant connection gap. [Building 07 (Production Building)]



Description: During inspection, several connection gaps were observed in between steel beam & column connection at several places. The building engineer is required to identify all the connection gaps and provide suitable remedial measure as per engineer suggestion.

Observation-7: Settlement on the ground. [Building 07 (Production Building)]



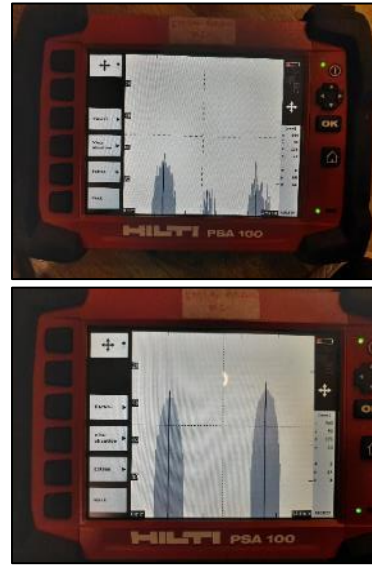
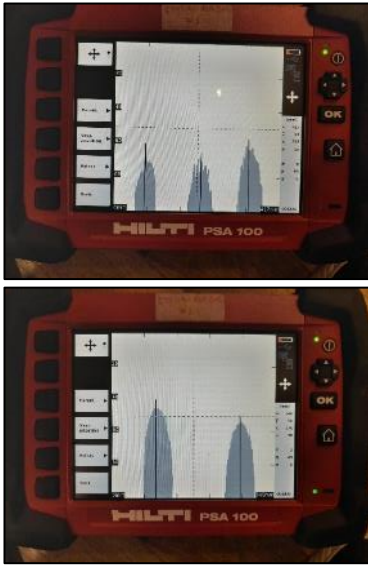
Description: During inspection, signs of settlement were observed on the ground beside the heavily loaded stenter machine. The building engineer is required to investigate the actual reason of settlement and take necessary remedial measure as per engineer suggestion.

Observation-8: Lack of design documents. [Building-11 (Dyes Chemical Store)]



Description: During the inspection, design report & material test reports were not available on site for the structure. Also, foundation details and geotechnical investigation report were not found onsite. The building engineer is required to carry out Detailed Engineering Assessment (DEA) based on in-situ material strength & software-based analysis and submit it to RSC for review.

Observation-9: Mismatch in as-built drawing. [Building 11 (Dyes Chemical Store)]



C4 column: 6 rebar found instead of 10

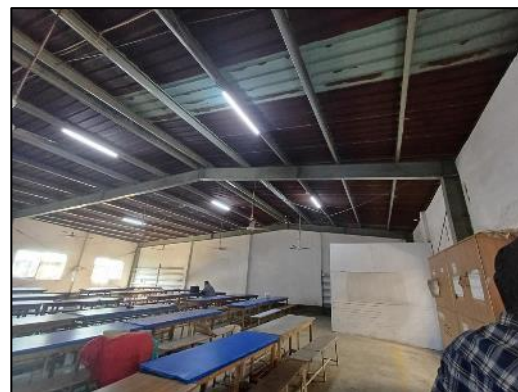
C1 column: 6 rebar found instead of 8 nos.

Description: During inspection, a set of structural drawings was found on site.

- No foundation information was provided in the drawing.
- A mismatch was found in the column schedule.

The building engineer is required to survey the full structure and prepare complete as built drawing.

Observation-10: Lack of lateral load transfer media. [Building-12 (Dinning shed)]



Description: Lateral load transfer media (compression strut) was missing in the structure. Also, foundation details, geotechnical investigation report and design documents were not found onsite. The building engineer is required to carry out Detail Engineering Assessment (DEA) based on in-situ material strength in compliance with BNBC (part-6, section 1.9.1).

Observation-11: Signs of settlement on the ground slab. [Building 12 (Dinning shed)]



Description: During inspection, signs of settlement were observed on the ground slab. The building engineer is required to investigate the reason of settlement and take necessary remedial measure as per engineer suggestion.

2. Action Plan

Observation	Action Plan	Timeline
Steel columns are stressed above normal design limit. [Building 07 (Production Building)]	The building engineer is required to carry out Detail Engineering Assessment (DEA) to review the design, loads and column stress based on in-situ material strength and floor live loads.	within 6 weeks
Steel columns are stressed above normal design limit. [Building 07 (Production Building)]	Produce and actively manage a floor live load plan for all floors of the building based on floor, column & foundation capacity. The floor load plan must include machinery weight and specifications.	within 6 weeks
Steel columns are stressed above normal design limit. [Building 07 (Production Building)]	Carry out suggested remedial works if required.	within 6 months
Incomplete drawing. [Building 07 (Production Building)]	The building engineer is required to survey the full structure and prepare complete as-built drawing.	within 6 weeks
Lack of drainage system on roof. [Building 07 (Production Building)]	The building engineer is required to improve the water drainage system on the roof with proper slope & adequate number of water outlets.	within 6 months
Missing bolt at several places. [Building 07 (Production Building)]	The building engineer is required to identify all the missing bolts and install bolts in all missing areas.	within 6 weeks
Corrosion in steel member. [Building 07 (Production Building)]	The building engineer is required to identify all the corroded member, remove all corrosion, and apply anti-corrosive coating.	within 6 months
Significant connection gap. [Building 07 (Production Building)]	The building engineer is required to identify all the connection gaps and provide suitable remedial measure as per engineer suggestion.	within 6 months
Settlement on the ground. [Building 07 (Production Building)]	The building engineer is required to investigate the actual reason for settlement and take necessary remedial measure as per engineer suggestion.	within 6 weeks
Lack of design documents. [Building 11 (Dyes Chemical Store)]	The building engineer is required to carry out Detailed Engineering Assessment (DEA) based on in-situ material strength & software-based analysis and submit it to RSC for review.	within 6 weeks
Lack of design documents. [Building 11 (Dyes Chemical Store)]	Carry out suggested remedial works if required.	within 6 months
Mismatch in as-built drawing. [Building 11 (Dyes Chemical Store)]	The building engineer is required to survey the full structure and prepare complete as built drawing.	within 6 weeks

Lack of lateral load transfer media. [Building-12 (Dinning shed)]	The building engineer is required to carry out Detail Engineering Assessment (DEA) based on in-situ material strength in compliance with BNBC (part-6, section 1.9.1).	within 6 weeks
Lack of lateral load transfer media. [Building-12 (Dinning shed)]	Carry out suggested remedial works if required.	within 6 months
Settlement on the ground slab. [Building 12 (Dinning shed)]	The building engineer is required to investigate the reason of settlement and take necessary remedial measure as per engineer suggestion.	within 6 weeks