



GMS Textiles Ltd.

Tansutrapur, Kaliakoir, Gazipur

Coordinates: 24.088270, 90.193806

13th January, 16th February and 3rd March 2020





Observations

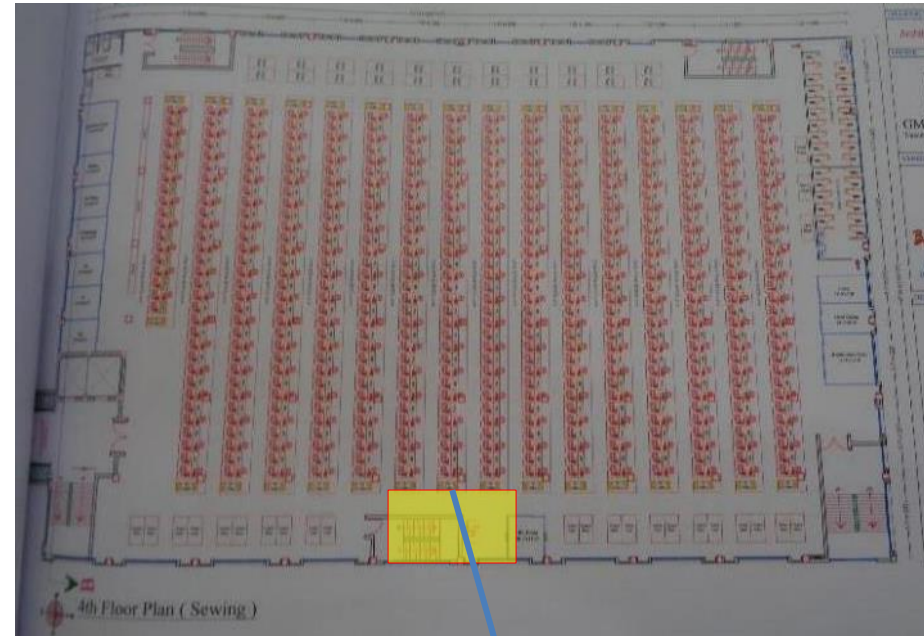


Mismatch in provided as-built documents



Mezzanine

The location of marked stair is found mismatch in as-built structural/architectural drawings. The factory engineer is required to revise the location of the stair in the as-built drawings.



Additional column confirmed by scanning

Mezzanine floor is being supported by some additional columns. No drawings details were found for the mezzanine floor.

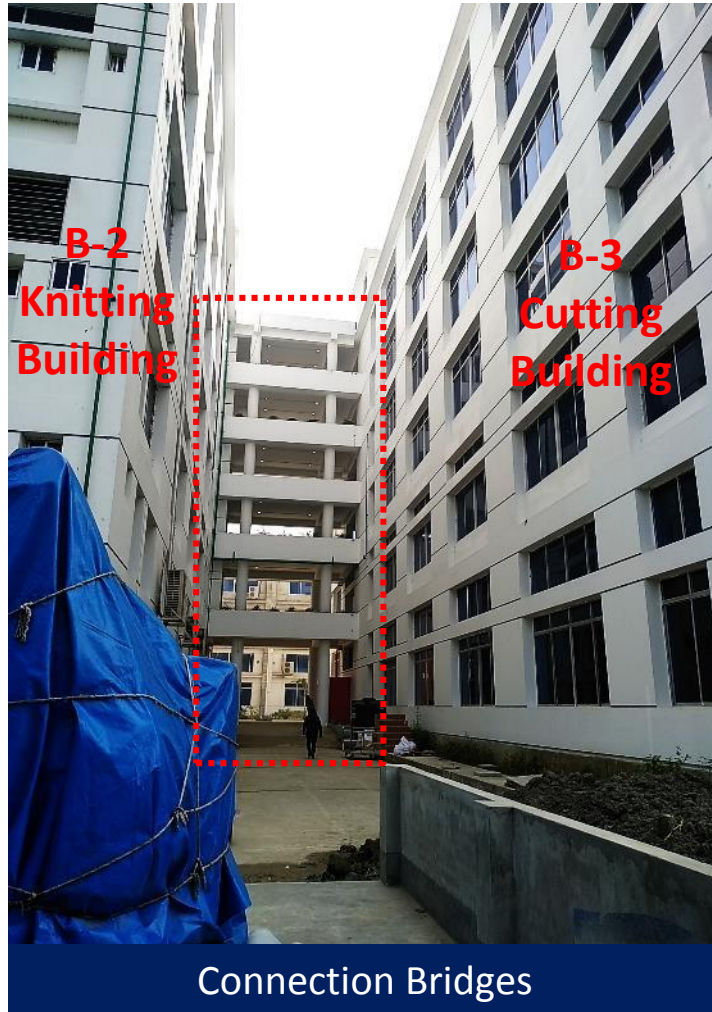


Stair



Lack of as-built drawing of Connection bridges between B-2 and B-3

Connecting bridges were found between B-2 (Knitting Building) and B-3 (Cutting Building) at different floor levels. The connection bridges are structurally separated from both buildings. Factory engineer is required to prepare as-built drawings.





Discrepancies in as-built structural drawings

Some L-shape columns were found in Grey Fabric Store building. The size and number of rebar of these column were not matched with column schedule.



L-shaped column



Rebar in L-shaped column

COLUMN SCHEDULE :							
COLUMN NAME	Below G.B. (0 th Clear Cover)	GROUND FLOOR (1 st Clear Cover)	1ST FLOOR (1 st Clear Cover)	2ND FLOOR (1 st Clear Cover)	3RD FLOOR (1 st Clear Cover)	4TH FLOOR (1 st Clear Cover)	5TH FLOOR (1 st Clear Cover)
C1	 30-25mmØ	 30-25mmØ	 12-25mmØ 8-20mmØ	 4-25mmØ 12-20mmØ	 16-20mmØ	 8-20mmØ 8-16mmØ	 16-16mmØ
C2	 16-25mmØ	 16-25mmØ	 8-25mmØ 8-20mmØ	 16-20mmØ	 8-20mmØ 8-16mmØ	 4-20mmØ 12-16mmØ	 16-16mmØ
C3	 12-25mmØ	 12-25mmØ	 8-25mmØ 4-20mmØ	 12-20mmØ	 8-20mmØ 4-16mmØ	 4-20mmØ 8-16mmØ	 12-16mmØ
C4	 16-25mmØ	 16-25mmØ	 8-25mmØ 8-20mmØ	 16-20mmØ	 8-20mmØ 8-16mmØ	 4-20mmØ 12-16mmØ	 16-16mmØ
C5	 16-25mmØ	 16-25mmØ	 8-25mmØ 8-20mmØ	 16-20mmØ	 8-20mmØ 8-16mmØ	 4-20mmØ 12-16mmØ	 16-16mmØ
C6	 12-25mmØ	 12-25mmØ	 8-25mmØ 4-20mmØ	 4-25mmØ 8-20mmØ	 12-20mmØ	 12-20mmØ	 12-20mmØ
C2R1	 16-25mmØ + 4-25mmØ + 2-20mmØ	 16-25mmØ + 4-25mmØ + 2-20mmØ					
C2R2	 16-25mmØ + 13-16mmØ	 16-25mmØ + 13-16mmØ					
							10mmØ @ 5"-10"-5" c/c.
							10mmØ @ 5"-10"-5" c/c.
							10mmØ @ 5"-10"-5" c/c.
							10mmØ @ 5"-10"-5" c/c.
							10mmØ @ 5"-10"-5" c/c.
							10mmØ @ 5"-10"-5" c/c.
							10mmØ @ 5"-10"-5" c/c.
							10mmØ @ 5"-10"-5" c/c.

Column Schedule

Observation : B-4 (Grey Fabric Store Building)



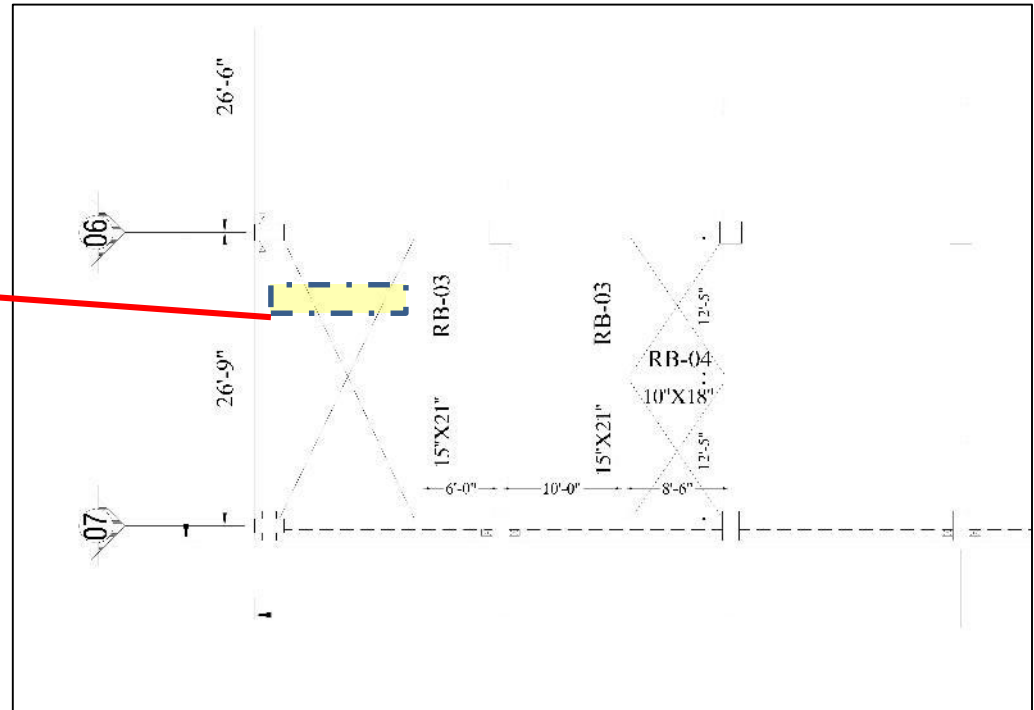
Discrepancies between as-built structural drawings and on-site condition



Extra beam was found on the south west portion between grid 07-08 and A-B. the measurement of the beam found to be 305 X 355 mm (d/s). This beam was found only on 1st floor.



Extra beam on stair



Captured from beam layout

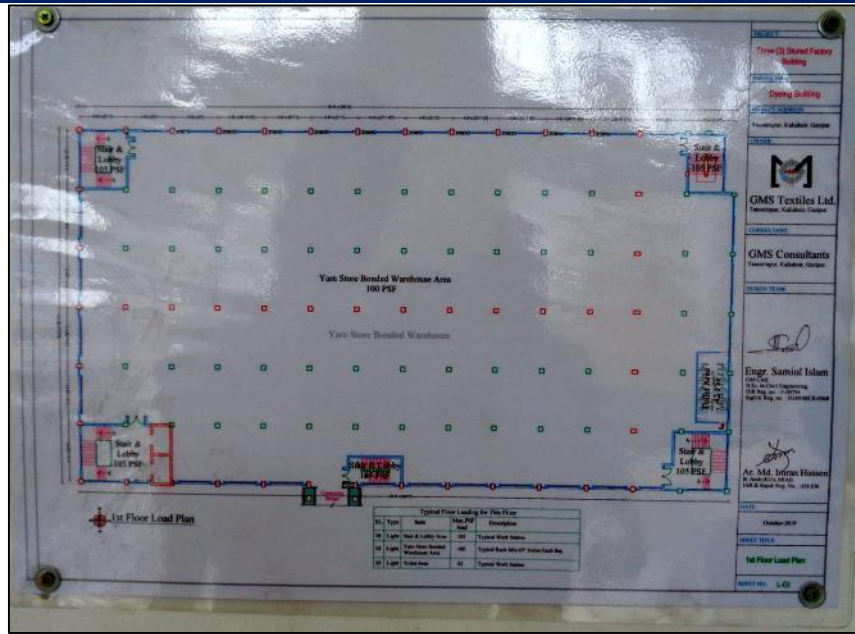
Observation : B-05 (Dyeing Building)



Enforce load management programme



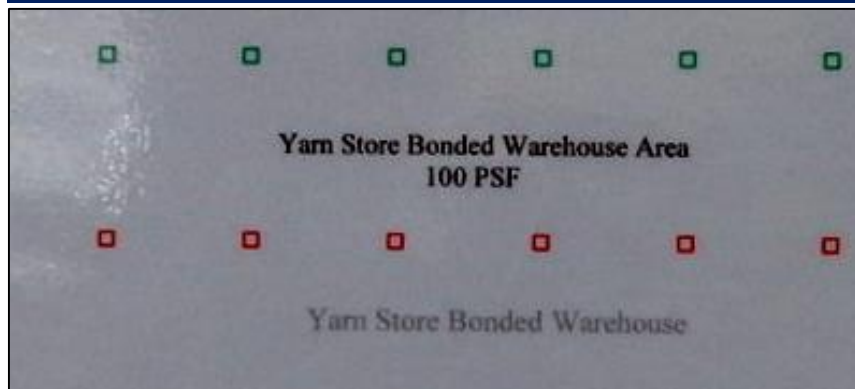
The load plan indicates the maximum allowable live load is 100 Psf (5 kPa). Though no calculation was provided to claim the rationality of using this load plan. No load height marking was observed.



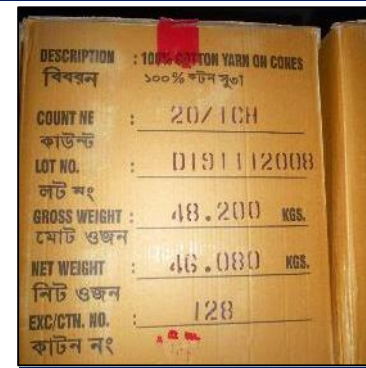
Load plan posted on different floors



Observed loading on 1st floor.



100 Psf (5 kPa) load mentioned in all floors

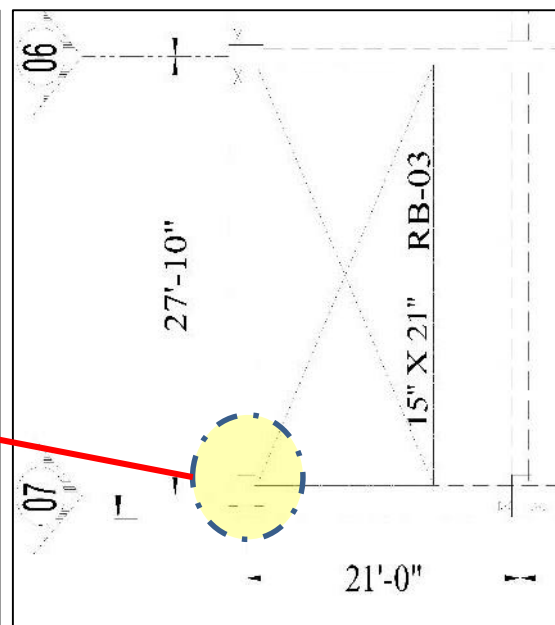
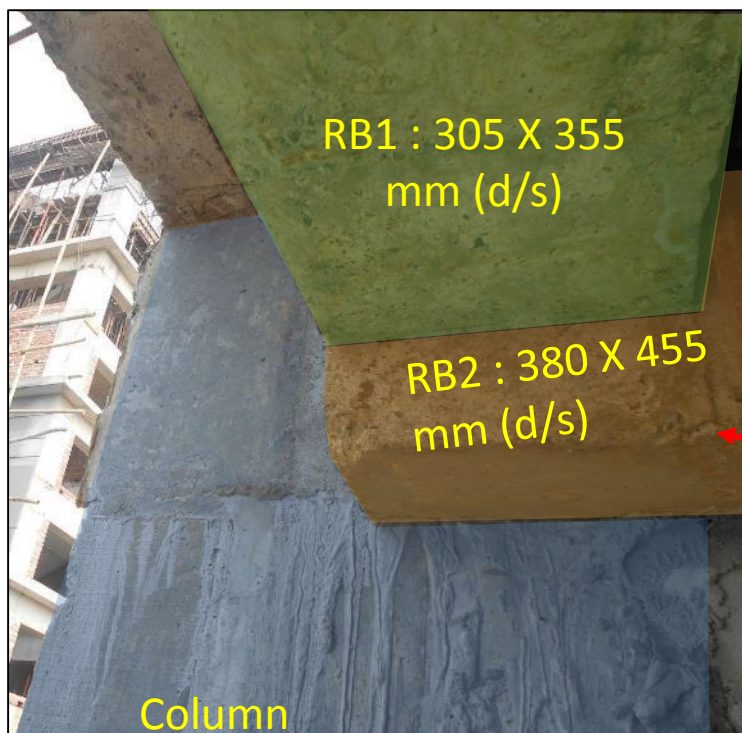


Weight written in the box

Observation : B-05 (Dyeing Building)



Beam Offset from Column-Beam Connection



Captured from beam layout

As per the drawing, RB02 was supposed to be connected to column with the edge. There was 125 mm offset found in RB02, which rise question of how the rebar of RB02 is joined with Column. The connection adequacy is required to be verified.



Column-Beam Connection



Offset around 125 mm



Tie beam and corbel appeared to be overstressed due to heavily loaded chimney



Chimney resting on corbel (east side)

Factory is required to carryout adequacy check of corbel and tie beam and implement any remediation work as required.



Corbel ultimately supported on tie beam which is producing overturning moment



Chimney resting on corbel (south-west side)



Inconsistency in provided drawing

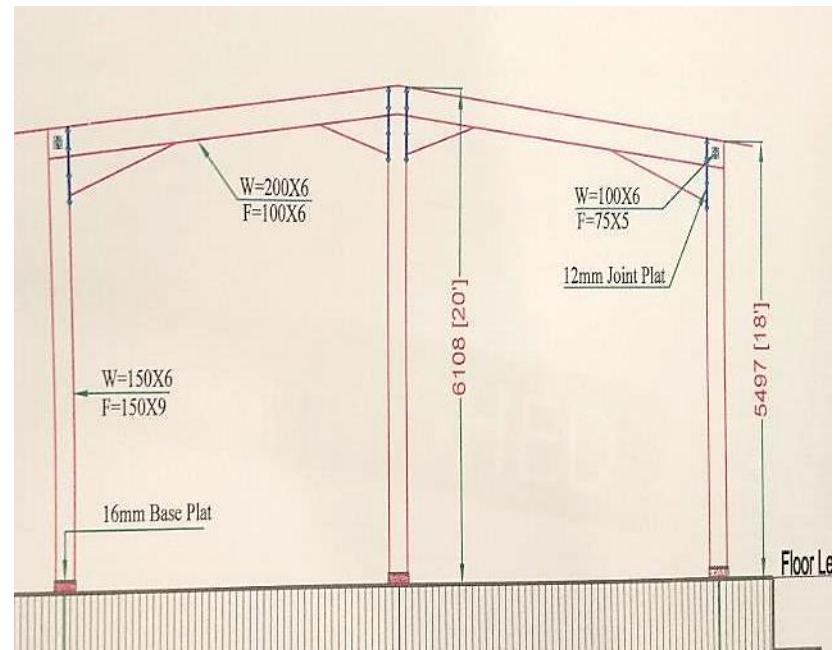
Observations: B-10 (Wastage Go-down Shed)



Flange thickness found 8.5 mm with coating for all internal columns



Flange thickness found 7.5 mm with coating for all periphery columns



Flange thickness was shown as 9mm for all columns

The factory engineer is required to produce accurate as-built structural drawings.



Lack of lateral stability

Observations: B-10 (Wastage Go-down)



Compression strut provided along long direction without any bracing/tension member.

Horizontal and vertical bracing at roof and wall was not provided to complete the lateral stability system. The factory engineer is required to design and install the necessary bracings for lateral stability of the structure.

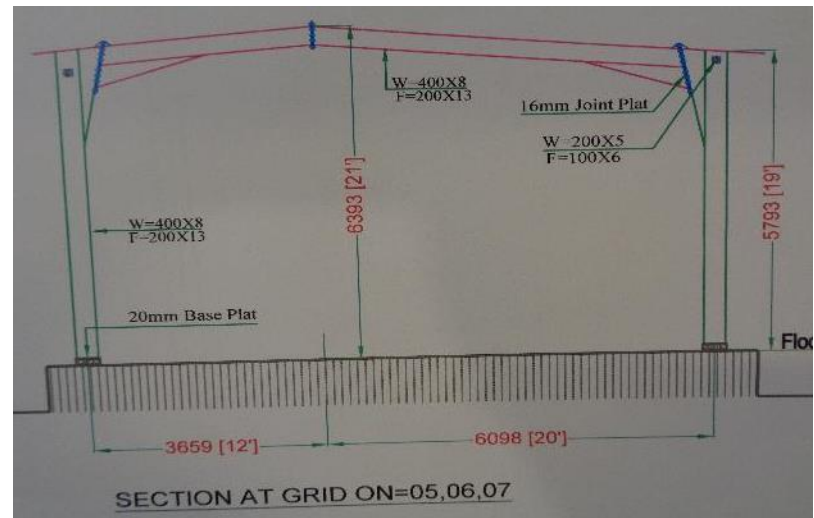
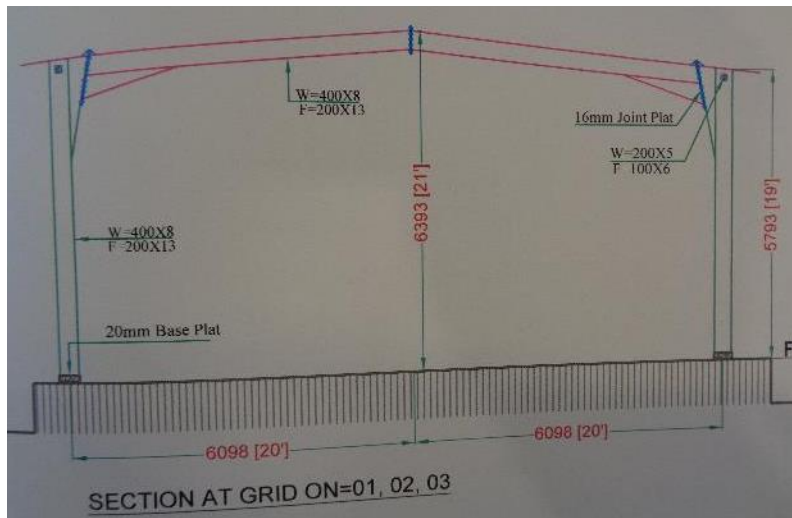


Inconsistency in provided drawing

Observations: B-11 (Raising Shed)



Marked steel columns at two end grids are not shown in provided drawing



Section of two end grids

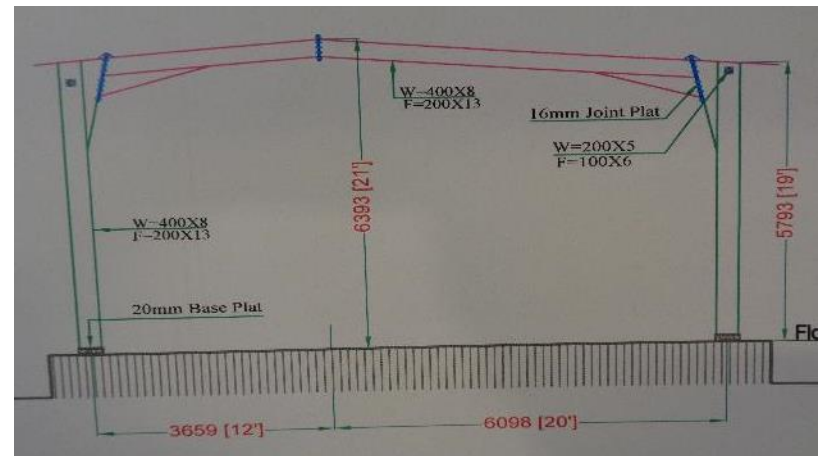


Rafter to column connection



Rafter to rafter connection

Connection details of all connection are not shown in provided drawing
The factory is required to produce accurate as-built drawing with proper connection detail.



No connection detail shown in drawing

Observations: B-11 (Raising Shed)



Insufficient lateral stability system

Observations: B-11 (Raising Shed)

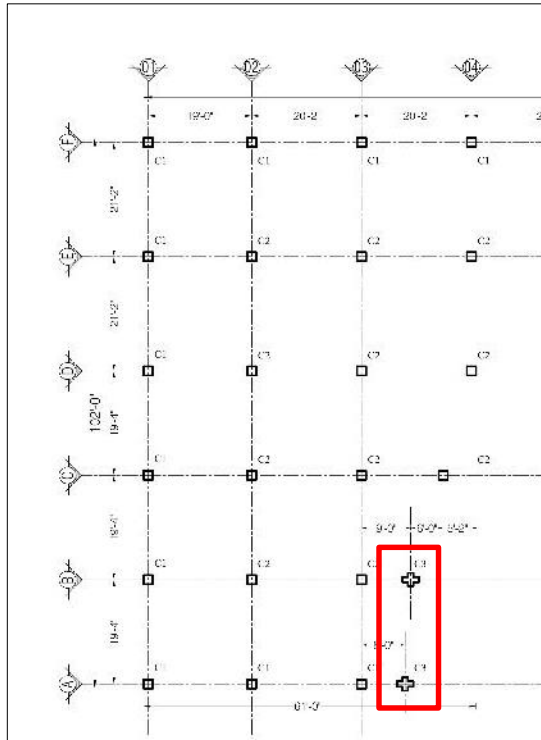


Compression strut provided along long direction without any bracing/tension member.

Horizontal and vertical bracing at roof and wall was not provided to complete the lateral stability system. The factory engineer is required to design and install the necessary bracings for lateral stability of the structure.



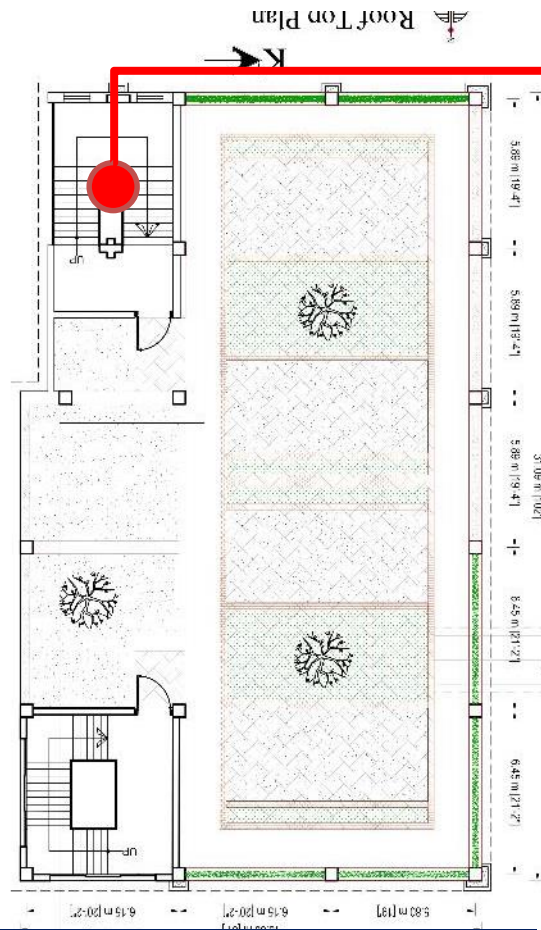
Discrepancies between as-built drawings and on-site observation



C3	33" 10" 13" 10" 33" 9" 15" 9" 12-10mm$\varnothing$ 8-12mm$\varnothing$	30" 12" 12-10mm$\varnothing$ 8-12mm$\varnothing$	30" 12" 12-10mm$\varnothing$ 8-12mm$\varnothing$	30" 12" 12-10mm$\varnothing$ 8-12mm$\varnothing$	10mm$\varnothing$ @ 5"~10"-5" o/c.

A person wearing a blue t-shirt and jeans stands on a wooden structure, possibly a ladder or scaffolding, in a room with large windows and a white wall. The person is holding a bundle of sticks or branches. The room has a high ceiling with a circular light fixture and a red fire alarm pull station. The walls are white and show signs of wear and peeling paint. The windows have blue metal grates.

As per column schedule, the shape of C3 column on upper floors was to be rectangular shaped but on site it was found “+” shaped.



Roof top plan



C3 Column

During inspection, a 3000 liters plastic water tank was found on the roof of southern staircase which not shown in as built architectural drawings.



Loading on 1st floor and ground floor

Observations: B-12 (WTP & Store Building)



Excessive Loading on the ground floor and 1st floor

There was no floor loading plan posted on the floors. During inspection loading was observed on ground floor 3.3 kPa (69 psf) and 1st floor 5.5 kPa (116 psf).

Observations: B-12 (WTP & Store Building)



Problems Observed

B-2 (Knitting Building) :

- 1: Mismatch in provided as-built documents.

B-3 (Cutting Building) :

- 1: Lack of as-built drawing of Connection bridges between B-2 and B-3.

B-4 (Grey Fabric Store Building) :

- 1: Discrepancies in as-built structural drawings

B-05 Dyeing Building

1. Discrepancies between as-built structural drawings and on-site condition
2. Enforce load management programme.

B-06 Dyeing Finishing Building

1. Beam Offset from Column-Beam Connection

B-9 (Boiler Building) :

- 1: Tie beam and corbel appeared to be overstressed due to heavily loaded chimney.



Problems Observed

B-10 (Wastage Go-down):

- 1: Inconsistency in provided drawing.
- 2: Lack of lateral stability.

B-11 (Raising Shed) :

- 1: Inconsistency in provided drawing.
- 2: Insufficient lateral stability system.

B-12 (WTP & Store Building) :

- 1: Discrepancies between as-built drawings and on-site observation
- 2: Loading on 1st floor and ground floor.



Item No.	Observation	Recommended Action Plan	Recommended Timeline
1	Mismatch in provided as-built documents (B-2)	The factory engineer is required to survey the structure and develop accurate as-built structural drawings for the mezzanine floor and the stair.	6-weeks
2	Lack of as-built drawing of Connection bridges between B-2 and B-3	The factory engineer is required to prepare as-built drawings for the connecting bridges.	6-weeks
3	Discrepancies in as-built structural drawings. (B-4)	The building engineer to check the structure, collect information of L-shaped column and revised as-built architectural documentations.	6-weeks
4	Discrepancies between as-built structural drawings and onsite condition. (B-5)	The building engineer to check the structure, collect information of missing beam and revised as-built drawings.	6-weeks
5	Enforce load management program. (B-5)	The building engineer to post floor load plan on each floor and indicate load restriction height marking on the storage areas.	6-weeks
6	Enforce load management program. (B-5)	Monitor loading so that the load in panel does not exceed the allowable limit.	6-weeks



Item No.	Observation	Recommended Action Plan	Recommended Timeline
7	Beam Offset from Column-Beam Connection. (B-6)	The beam-column connection adequacy check is required to be verified emphasizing on how the rebar from beam is connected to column.	6-weeks
8	Beam Offset from Column-Beam Connection. (B-6)	Carry out remedial works if required.	6-months
9	Tie beam and corbel appeared to be overstressed due to heavily loaded chimney (B-9)	The factory is required to carryout adequacy check of corbel and tie beam.	6-weeks
10	Tie beam and corbel appeared to be overstressed due to heavily loaded chimney (B-9)	Carry out any remedial works where necessary.	6-months
11	Inconsistency in provided drawing (B-10: Wastage Go-down)	The factory is required to produce accurate as-built drawing with proper connection details.	6-weeks



Item No.	Observation	Recommended Action Plan	Recommended Timeline
12	Lack of lateral stability (B-10: Wastage Go-down)	The factory engineer to perform engineering assessment (EA) to confirm the lateral stability of the structure.	6-weeks
13	Lack of lateral stability (B-10: Wastage Go-down)	Implement remedial works as per recommendation of EA.	6-months
14	Inconsistency in provided drawing (B-11: Raising Shed)	Factory is required to produce accurate as-built drawing with proper connection details.	6-weeks
15	Insufficient lateral stability system (B-11: Raising Shed)	The factory engineer to perform engineering assessment (EA) to confirm the lateral stability of the structure.	6-weeks
16	Insufficient lateral stability system (B-11: Raising Shed)	Implement remedial works as per recommendation of EA.	6-months
17	Discrepancies between as-built drawings and on-site observation (B-12: WTP & Store Building)	The building engineer to survey the structure and produce accurate as-built drawings.	6-weeks
18	Loading on 1st floor and ground floor (B-12: WTP & Store Building)	Produce and actively manage load plans for all floor plates considering column and floor capacity.	6-weeks
19	Loading on 1st floor and ground floor (B-12: WTP & Store Building)	Continue to implement floor load plan.	6-months