



Bela Fashions Ltd.

6 Shing Bari Road Boro Dewra Tongi, Gazipur-1700.

(23.906903 N, 90.379366 E)

15th July 2018



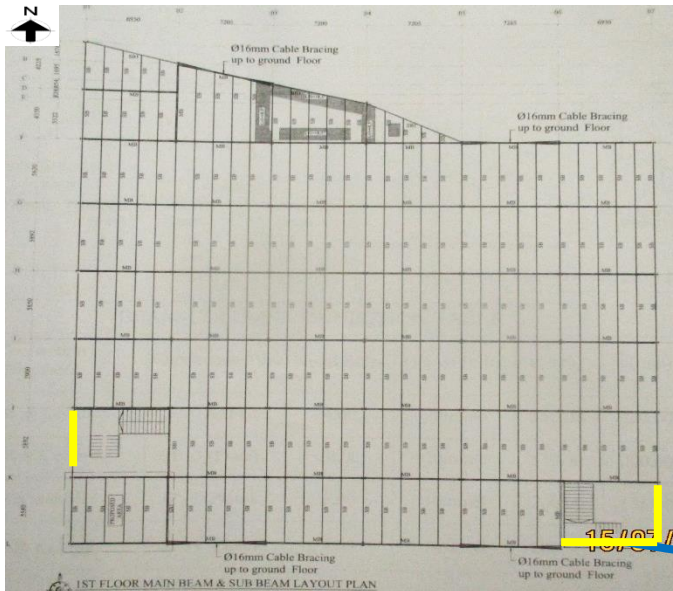


Observations



Lateral stability

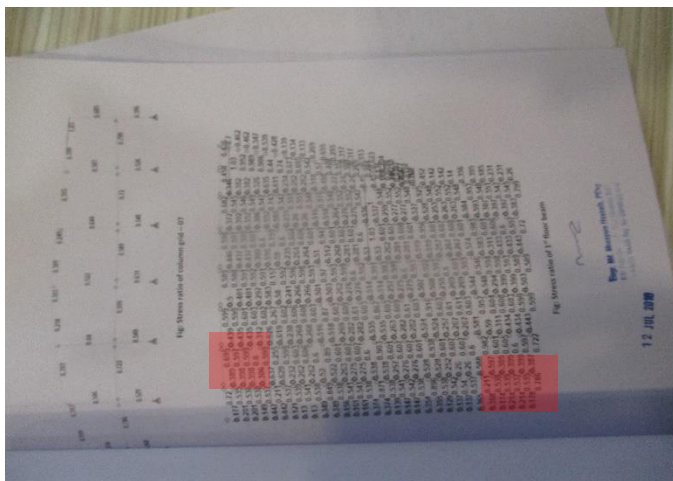
Observation: Production Building



Beam layout

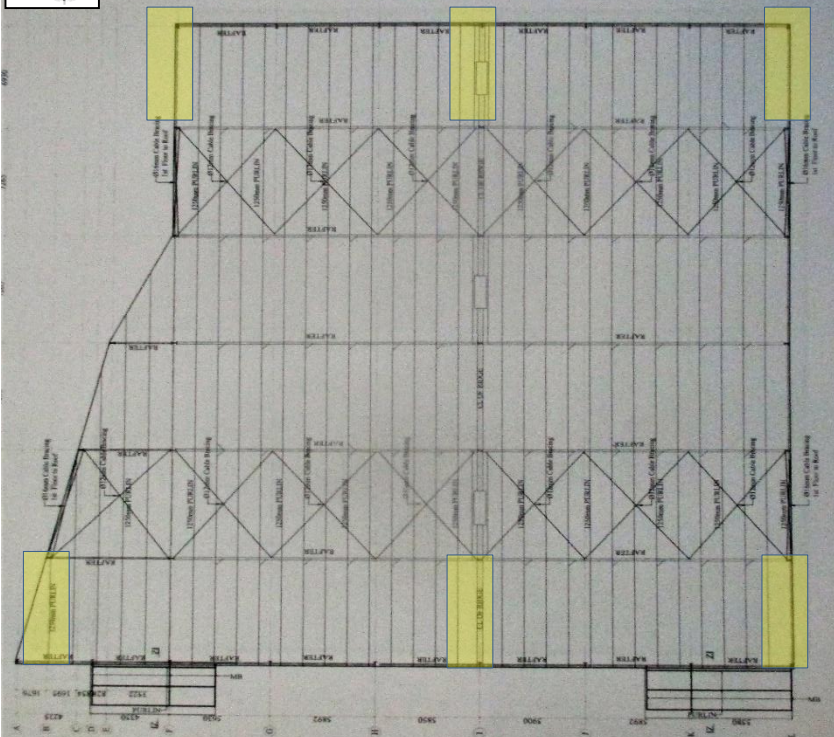


End beam missing at East stair



Stress ratio in 1st floor beam

At end bay (near stair) no steel beam has been provided. But in provided design report that beam has been considered . Load transferring medium of end frame and first internal frame is not clear.



Bracing Layout

No compression strut or bracings were found between the end frame and first internal frame to transfer the lateral loads towards that direction.



No compression stud

Also, loose vertical & horizontal bracings were found. Factory engineer is required check the stability of the structure against lateral loading.



Loose roof bracing

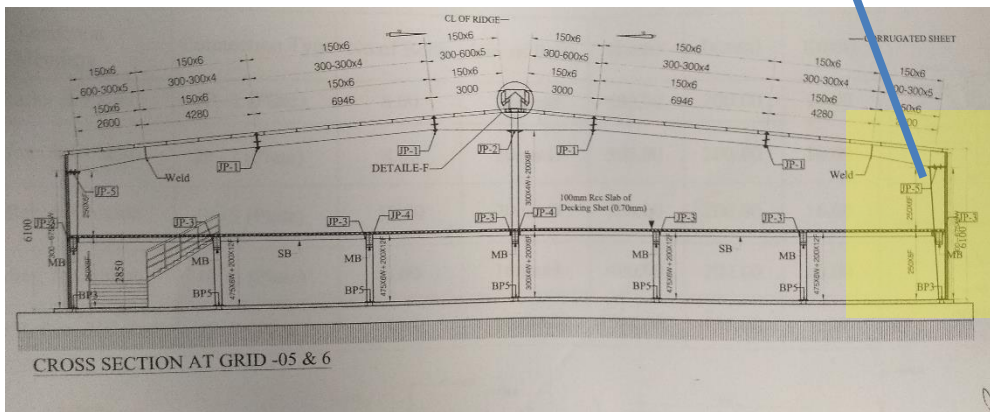
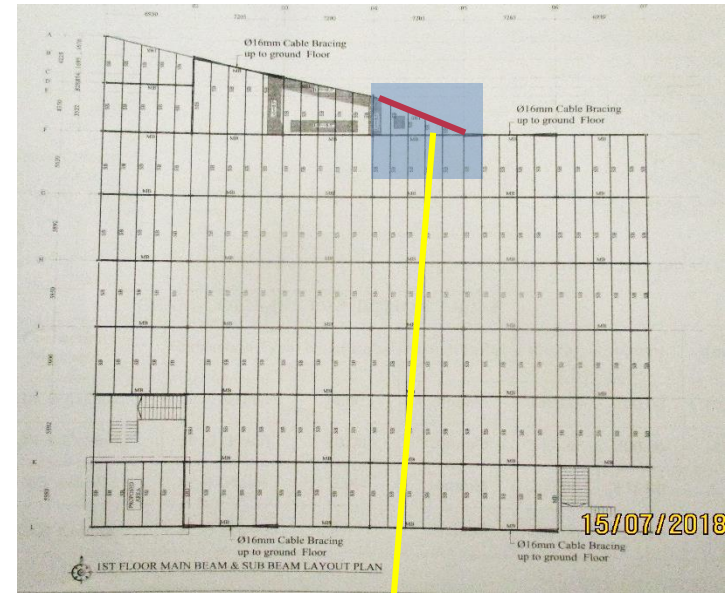
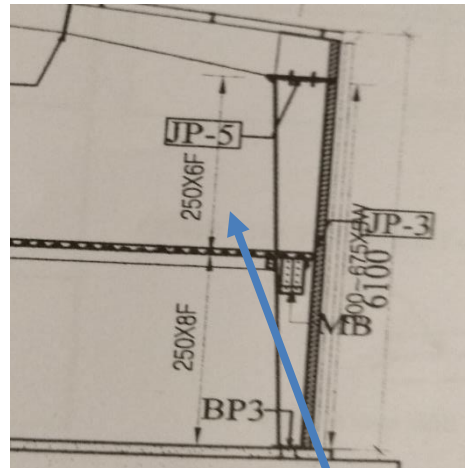


Loose vertical bracing



Discrepancies in as-built drawings

Sub-beam layout does not fully match with as-built condition. At North SB type beam was found instead of SB-1. Mismatch is shown in red on drawings.



Width of flange does not match with as-built condition for periphery column at 1st floor. 175mm width was found instead of 250 mm.

SB instead of SB-1

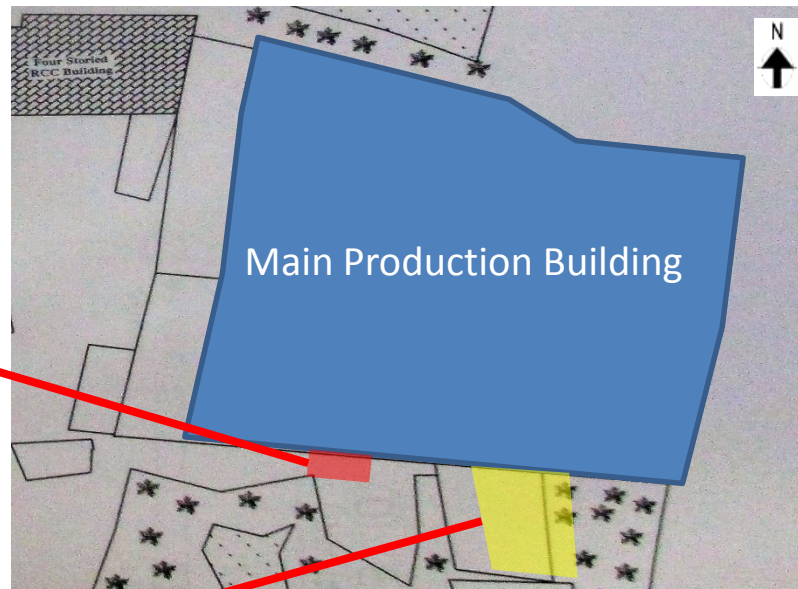


2-storied RCC toilet block



Single storied extension used as finishing

Undocumented extension observed at South side of production building.



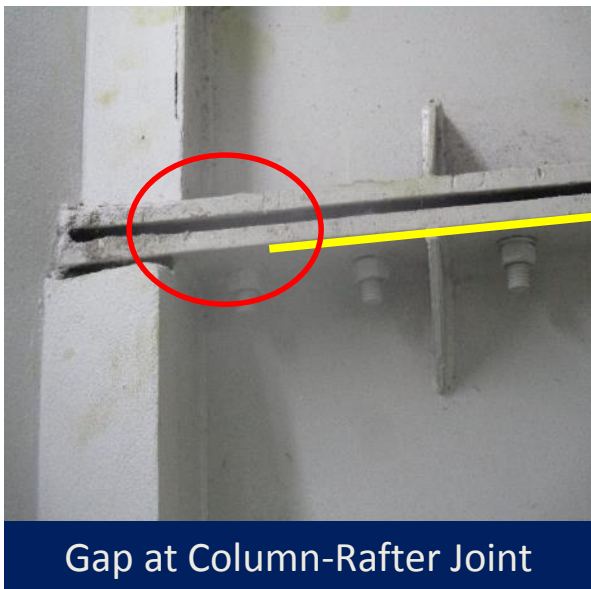
Factory Layout



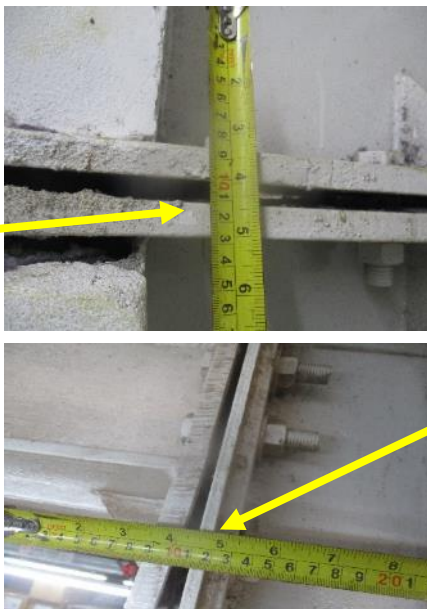
Inside of single storied extension



Significant gaps and loose bolts at several connections



Gap at Column-Rafter Joint



Gap at beam column Joint



Improper bolt connection

Significant gaps and undersized bolts were observed in column rafter joint at several locations. Building engineer is required to carry out suitable remedial works.



Corrosion and dampness



Steel columns at periphery is prone to be corroded due to observed water leakages.

Also, corrosion found at column inside Ground floor toilet zone. Factory engineer to identify the cause of dampness & suggest appropriate remedial action. Also, apply suitable method to protect the steel members from corrosion.



Dampness on periphery wall



Corrosion at column base inside toilet zone



Poor construction works in retrofitted columns



Improper welding

Tack welding was found in several columns. Flange and web are poorly welded.



Improper welding



Proximity of Lake/Surface water channel



Lake is very close to structure. Building engineer to monitor building for signs of water ingress and appropriate action to be taken if ingress occurs.



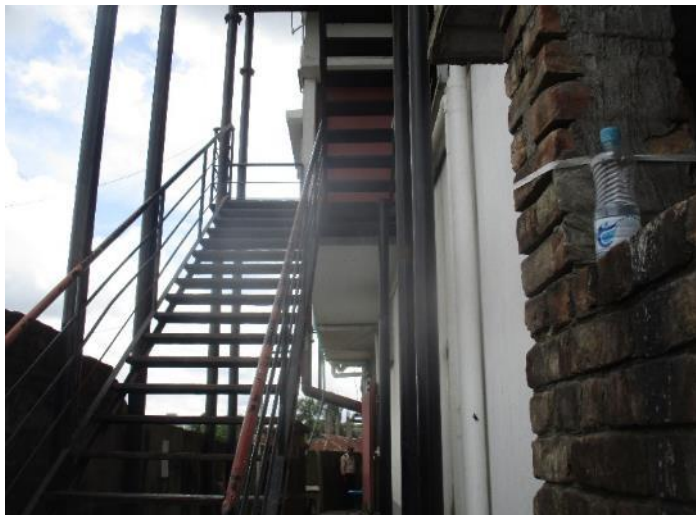
Surface water channel



Water body near office building



Apparently non-engineered external steel stair



No lateral stability for steel stair



Stair landing Poorly connected with office building



External steel stair at south. No drawing was available during inspection.

Observation : Office Building



Problem Observed

Production Building:

1. Lateral stability.
2. Discrepancies in as-built drawings.
3. Significant gaps and loose bolts at several connections.
4. Corrosion and dampness.
5. Poor construction works in retrofitted columns.

Office Building:

6. Proximity of Lake/Surface water channel.
7. Apparently non-engineered external steel stair



Item No.	Observation	Recommended Action Plan	Recommended Timeline
1	Lateral stability	Factory engineer need to check stability system of the structure against lateral loading.	6-weeks
2	Lateral stability	Tighten loose bracings where required.	6-weeks
3	Lateral stability	Carry out remedial works where necessary.	6-months
4	Discrepancies in as-built drawings	Building Engineer to survey as-built structure and prepare accurate as-built survey information for the building.	6-weeks
5	Discrepancies in as-built drawings	Prepare as-built documentation and check lateral stability for undocumented portion.	6-weeks
6	Significant gaps and loose bolts at several connections	Identify all the location and carryout suitable repair works where necessary.	6-weeks
7	Corrosion and dampness	Factory engineer is required check the cause of dampness and suggest suitable repair method.	6-weeks
8	Corrosion and dampness	Apply suitable method to protect the steel members from corrosion.	6-weeks
9	Poor construction Poor construction works in retrofitted columns	Building Engineer is required to confirm adequate welding joints where necessary.	6-weeks



Item No.	Observation	Recommended Action Plan	Recommended Timeline
10	Proximity of Lake/Surface water channel	Building Engineer to monitor the structure for signs of water ingress and take preventative action if necessary.	6-months
11	Apparently non-engineered external steel stair	Prepare required documentation.	6-weeks
12	Apparently non-engineered external steel stair	Engage Building Engineer to check load bearing capacity of external escape stair and to ensure adequate stability and connections are provided.	6-weeks