

Day Apparels(12483) Day Fashion(12571)

M H Tower, 21, Vogra, Gazipur – 1704
(23.981525N, 90.381451E)

8th December 2016





Observation

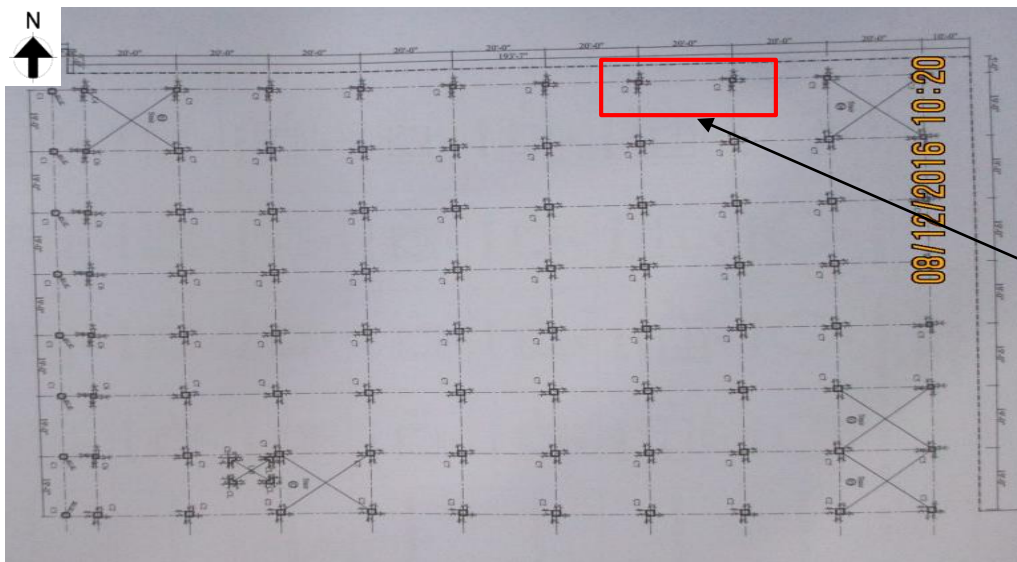


Factory Building



Apparently high punching stress in flat slab

Factory Building



Cursory calculations shows risk of punching shear due to heavy loading on flat slab due to built up



Over stress area due to punching stress



Build-up in toilet portion



Depth of built-up

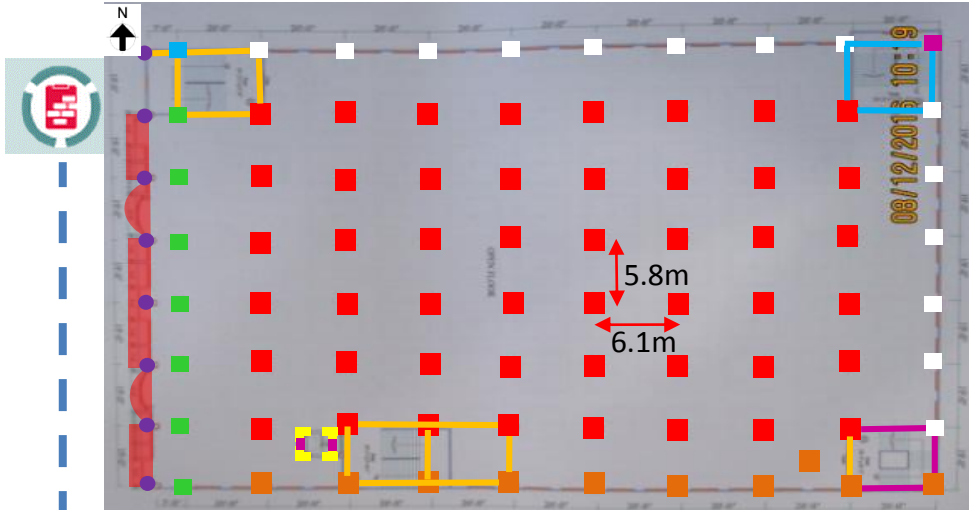
From the cursory calculations flat slab was appeared to be stressed by punching shear due to loads from the toilet build-up and partition walls in typical floor level.

Factory Building

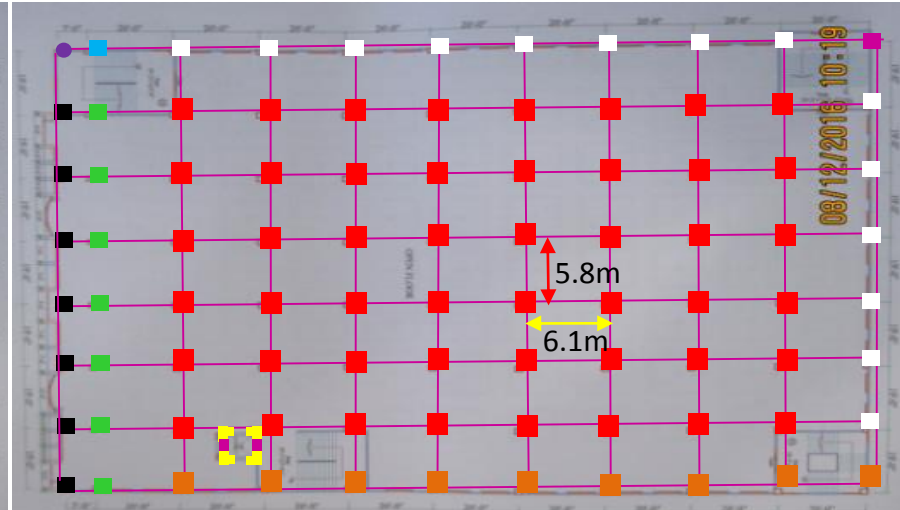


Apparently Lack of Lateral stability

Factory Building



Typical flat slab with column Layout ground to 3rd floor



Typical beam Column Layout 4th & 5th floor



Flat slab from
GF to 3rd Floor



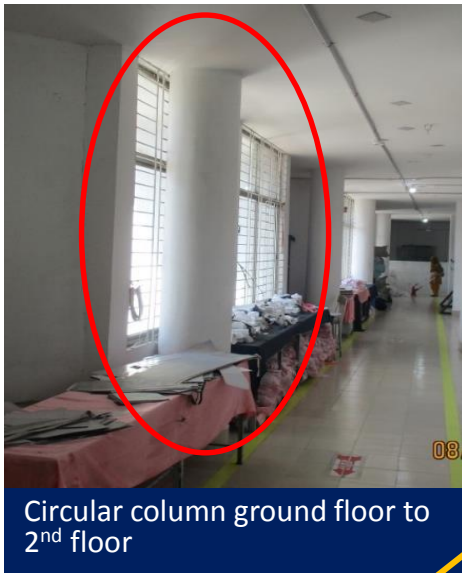
Typical beam-
column joint at
4th floor

Due to combination of flat slab and beam column structural system, the lateral load path is not clear. Building engineer to check lateral stability of the building against lateral load as per BNBC load.

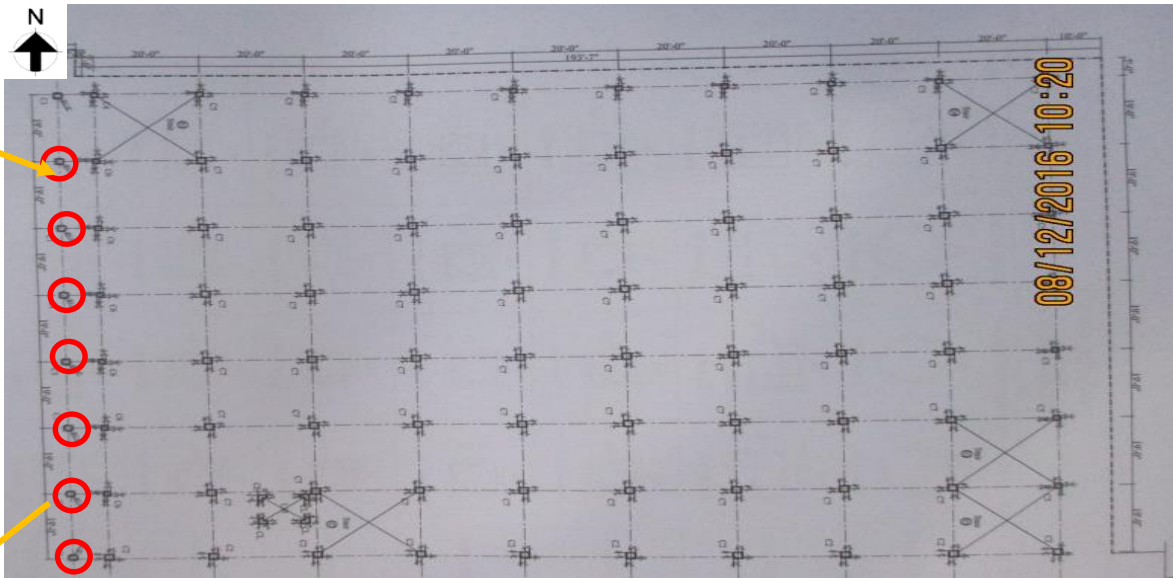
Factory Building



Discrepancy found between as built condition and provided drawing



Circular column ground floor to 2nd floor



Column Layout



Square column 3rd to roof top

same Column	BELOW GB.	GR. TO 3RD FL.	4TH TO 5TH FLOOR	6TH TO 7TH FLOOR
C1	23"Ø	20"Ø	20"Ø	20"Ø
08	10-20mmØ	10-20mmØ	10-20mmØ	10-16mmØ
	23"	20"	20"	20"

Provided column schedule of C1 type column

C1 type columns were found square shape on 3rd and 4th floor and circular shape from ground to 2nd floor where in column schedule, this column shape was shown as circular on all floor

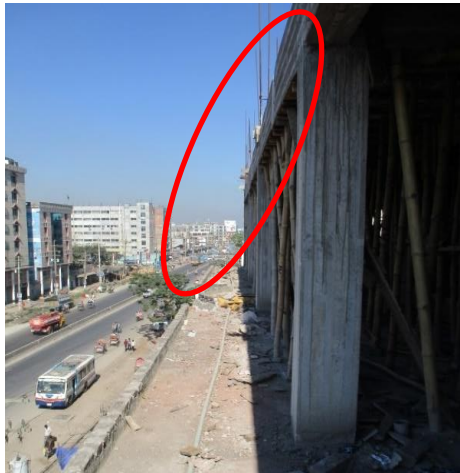
Factory Building



Circular shape brick wall was observed instead of straight wall in drawing

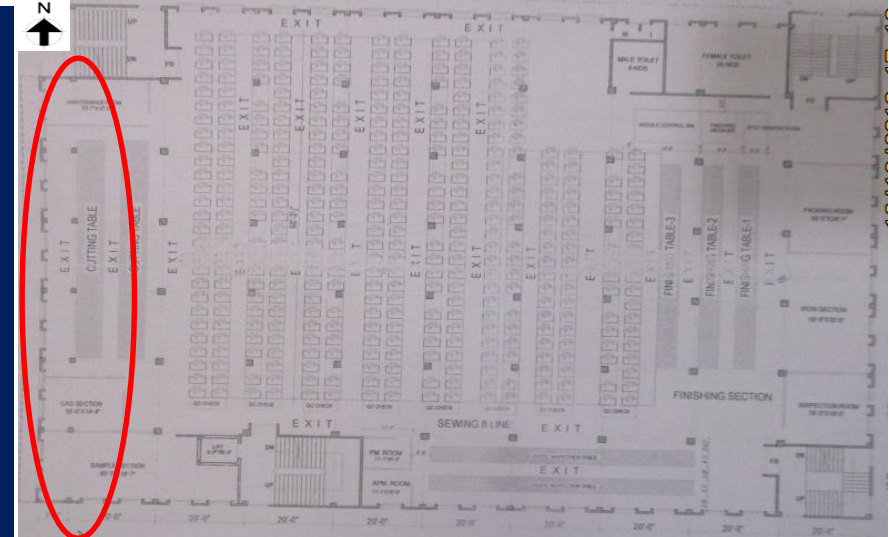


Typical floor plan



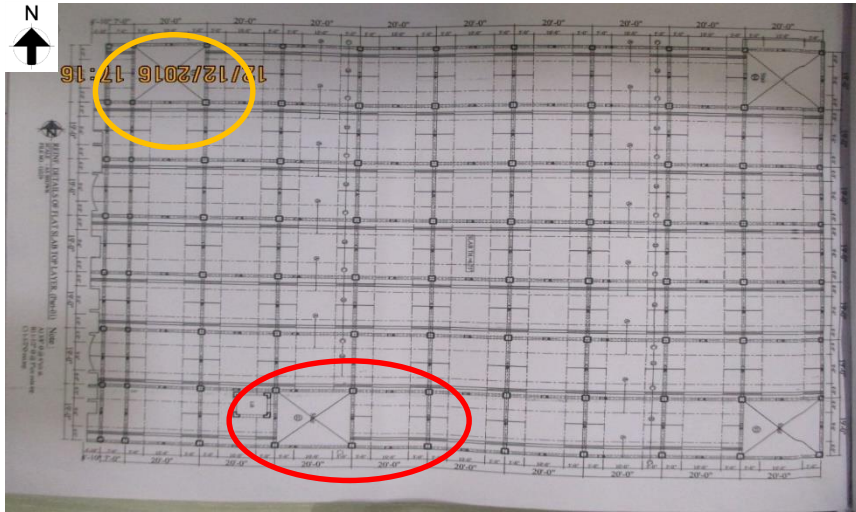
No Cantilever portion on 4th floor top Slab was observed which was present in drawing

Front elevation did not match with provided architectural drawing. Also the cantilever was absent which was shown in drawing.

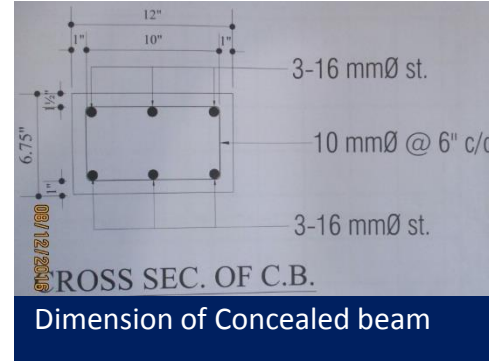


4th floor plan(existing roof top floor)

Factory Building



Slab reinforcement with concealed beam layout for typical floor



Beam was observed under 4th floor top slab and around stair case where as-build structural drawing showed concealed beam through the typical floor slab



Beam under the 4th floor top slab



Beam was observed beside the stair case

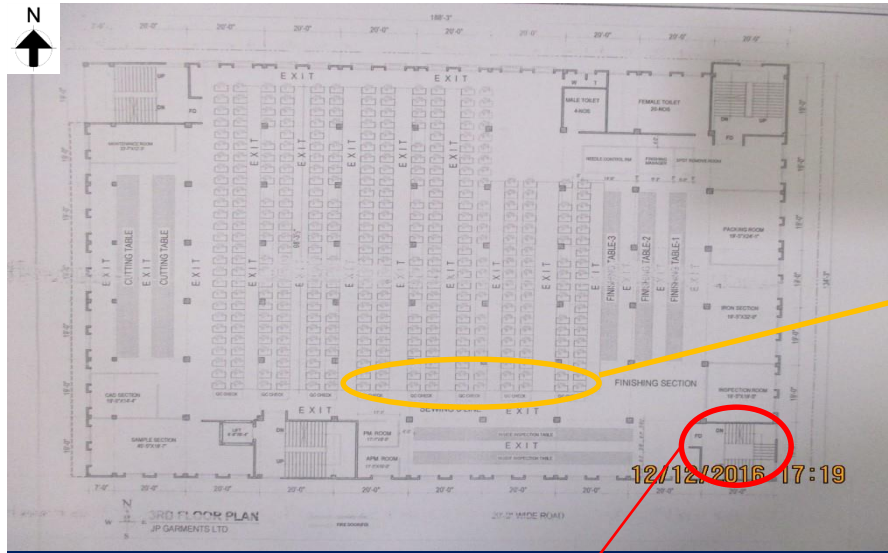


Beam was observed around stair case

Factory Building



Cracks on Slab & Stair



3rd floor layout plan



Crack observed under 3rd floor roof slab



Crack on 3rd floor waists slab of South East stair



Hair line crack was observed on 3rd floor roof slab. Cracks were appeared under waist slab, on 3rd and 2nd floor.

Factory Building



Water intrusions in several places



Water Dampness found on 3rd floor roof slab on several places

Water dampness was observed on several places due to water intrusion. Factory is required to take necessary remedial measures.



Water Dampness found on North East stair case

Factory Building



Lack of edge protection



No edge protection was observed on existing roof



No edge protection was observed on 4th floor

No edge protection system was found in construction area. Factory is required to provide edge protection immediately to avoid falling hazard.

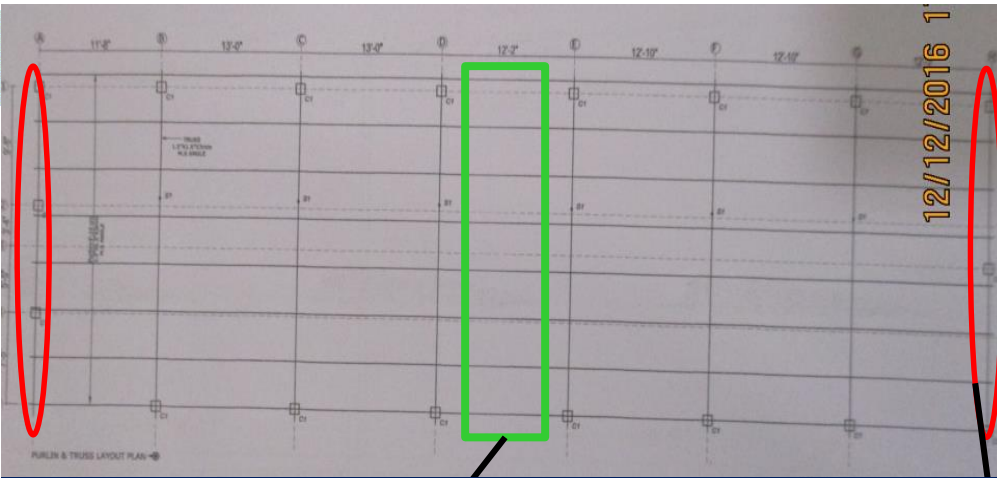
Factory Building



Canteen Shed



Discrepancy found between as built condition and provided drawing



Purlin and Truss Layout Plan



Observed seven purlin in the shed



Truss was absent at both end of shed

During inspection, only seven purlin were found instead of eight purlin in drawing. Also no truss was observed at the both end of the shed.

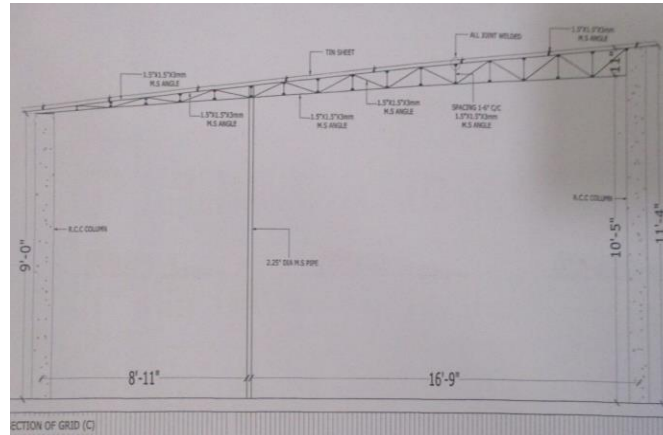
Canteen



Light weight Roof shed of Canteen appears non engineered



Canteen shed



Section of steel Shed

The support condition of roof top shed was non engineered due to poor detailing.



Truss connection with RC column



Connection between steel post and truss



End Connection between Column and truss

Canteen



Problems Observed

Factory Building:

Item1 : Apparently high punching stress in flat slab

Item2 : Apparently Lack of Lateral stability

Item3 : Discrepancy found between as built condition and provided drawing

Item4 : Cracks on Slab & Stair

Item5 : Water intrusions in several places

Item6 : Lack of edge protection

Canteen Shed:

Item7 : Discrepancy found between as built condition and provided drawing

Item8 : Light weight Roof shed of Canteen appears non engineered



Item No.	Observation	Recommended Action Plan	Recommended Timeline
1	Apparently high punching stress in flat slab	Building engineer to conduct a engineering assessment to check the adequacy of the flat slab and foundation of the building .	6-weeks
2	Apparently high punching stress in flat slab	Verify in-situ concrete stresses by 100mm dia. cores from 4 nos areas of flat slab –not located within the column/slab punching zone.	6-weeks
3	Apparently high punching stress in flat slab	Produce and actively manage a loading plan for all floor plates within the Building, giving consideration to floor capacity and column capacity.	6-months
4	Apparently high punching stress in flat slab	Continue to implement the load management plan.	6-months
5	Apparently Lack of Lateral stability	Building Engineer to review the lateral stability of the building for the BNBC recommended lateral load as part of engineering assessment.	6-weeks
6	Apparently Lack of Lateral stability	Carry out remedial works resulting from engineering assessment if necessary.	6-months
7	Discrepancy found between as built condition and provided drawing	Building engineer to survey the whole building and produce as-built documentation reflecting the as constructed condition.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
8	Cracks on Slab & Stair	Sections of plaster finish to be removed to investigate if cracks penetrate the building structure.	6-weeks
9	Cracks on Slab & Stair	As part of Engineering Assessment, Factory Engineer to carry out design check on the affected areas	6-weeks
10	Cracks on Slab & Stair	Carry out remedial works resulting from engineering assessment if necessary.	6-months
11	Water intrusions in several places	Factory Engineer to inspect water-damaged structure and identify the source of the water ingress.	6-weeks
12	Water intrusions in several places	Eliminate the source of water ingress.	6-weeks
13	Water intrusions in several places	Implement structural repairs.	6-months
14	Lack of edge protection	Install adequate edge protection on roof level as per suggestion of factory engineer.	6-weeks
15	Discrepancy found between as built condition and provided drawing	Building engineer to survey the whole building and produce as-built documentation reflecting the as constructed condition	6-weeks
16	Light weight Roof shed of Canteen appears non engineered	Building engineer to check the capacity of the lightweight steel roofs under lateral and vertical loading following BNBC.	6-weeks
17	Light weight Roof shed of Canteen appears non engineered	Carry out remedial works resulting from engineering assessment if necessary.	6-months