

Fakir Fashion Ltd (Extension 2)

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27th August 2019

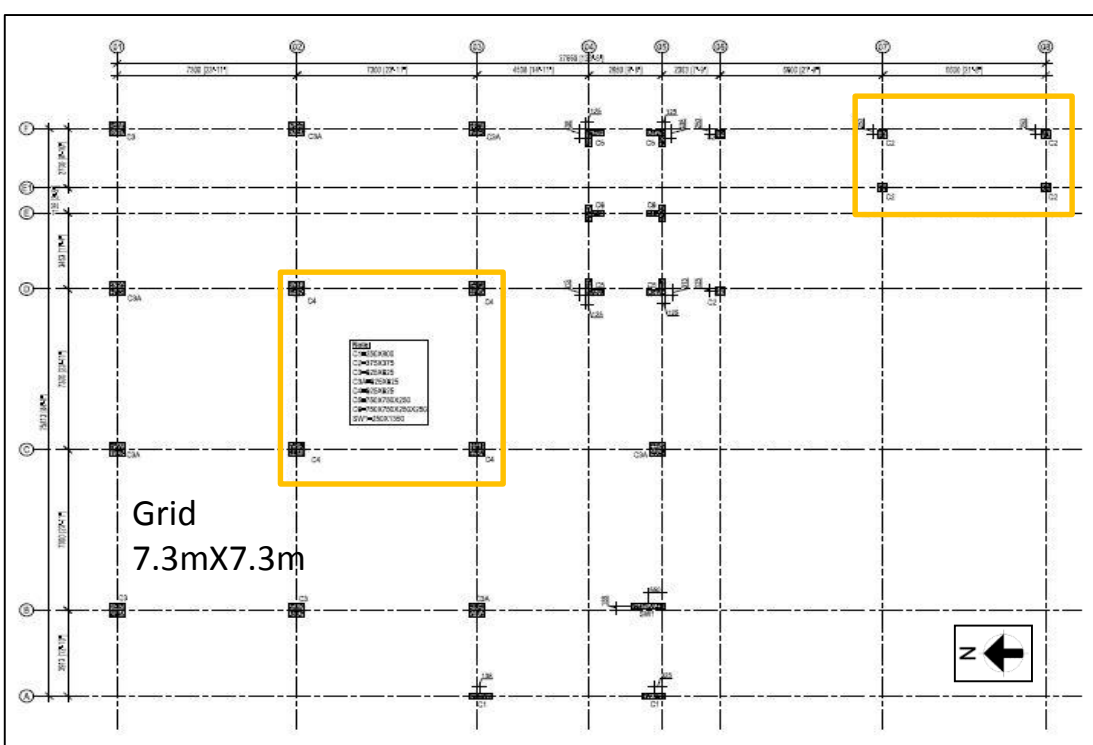




Observations



**Columns are stressed above normal design limit
considering prepared load plan**



Column Layout plan

Cursory calculation indicates that the marked columns are stressed above normal design limit considering prepared live load plan of 5 kPa and assuming minimum concrete strength of stone chips. Building engineer is required to review design, load & column stress in the area identified above.

24.1 MPa (3500 psi) concrete strength mentioned in general note. Calculation and sufficient test report not present during inspection.



5 kPa live loading observed. Also considered in Load Plan



5000L water tanks with 200 mm additional slab

Note :

Concrete Compressive Strength $f_c = 3,500$ psi.
Reinforcement 60 grade deformed bar ($f_y = 60,000$ psi)
Clear Cover below Ground Level = 62mm, Above Ground Level = 40mm

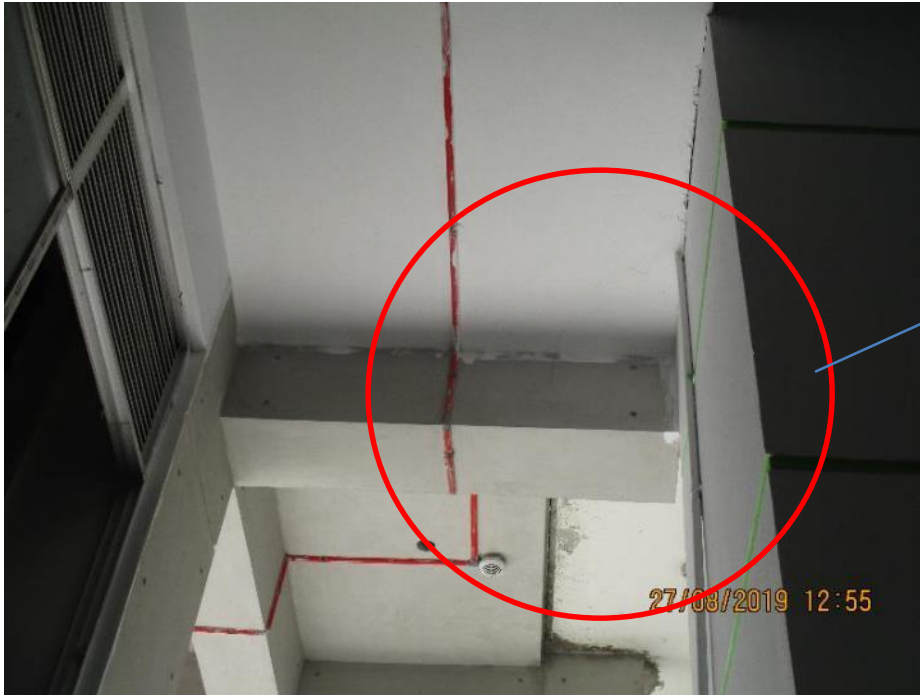
General notes in drawings

Observation: Building 6



Cracking in cantilever beam & slab

Observation: Building 6



Cracks observed in cantilever beam and slab. Building Engineer to check the extent of the cracks.

Observation: Building 6



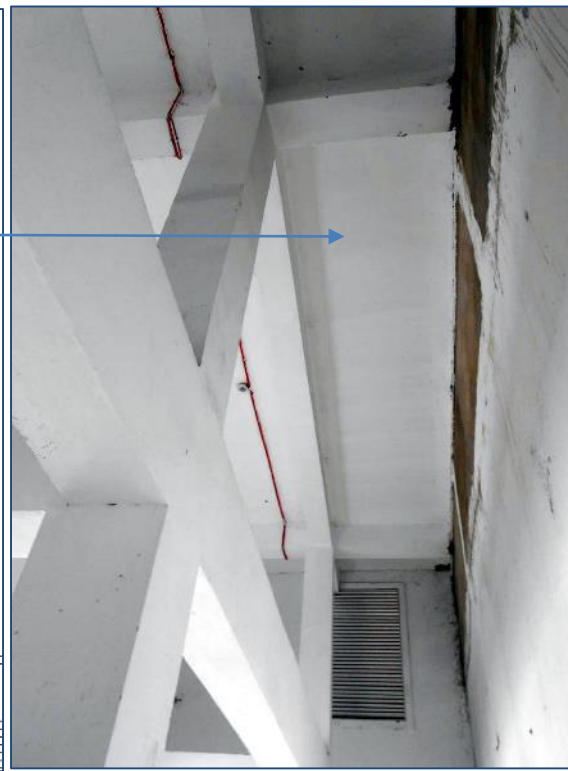
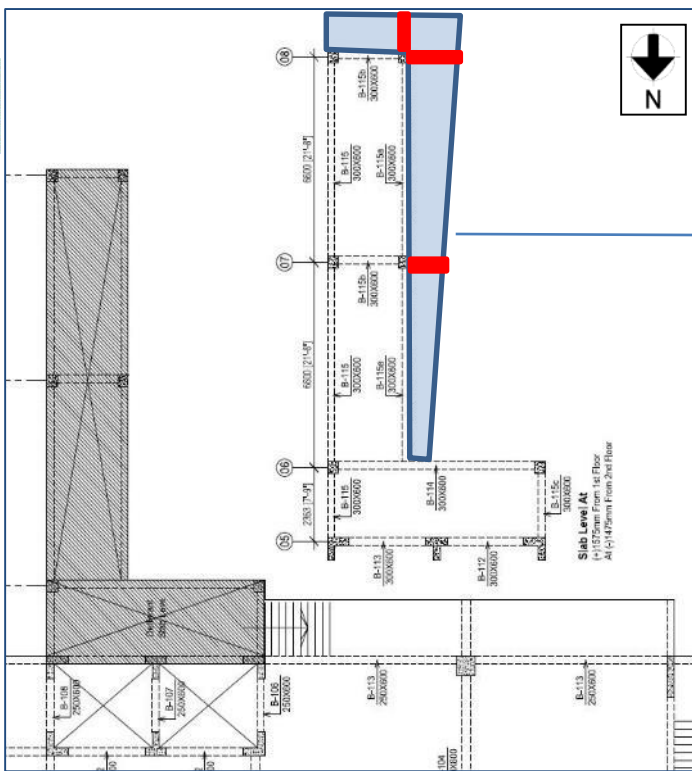
Damage at column edge



Damaged column observed on ground floor area. Building engineer is required to check the extent of damage and suggest required remedial works considering possible impact loading.

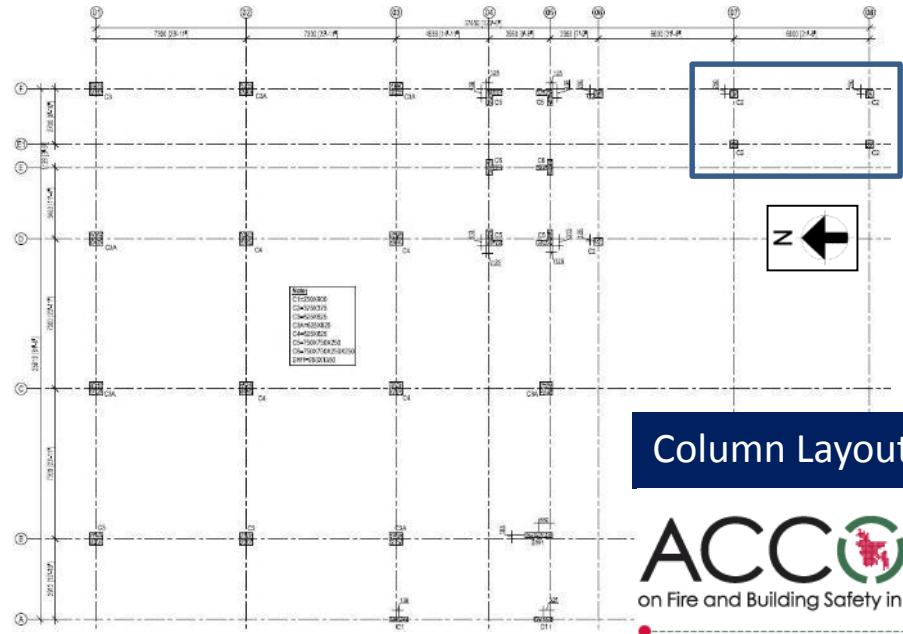


Discrepancies in as-built drawings



There are anomalies between as-built drawings and as constructed structure for the cantilever slab outline and beam. Also, rebar in C2 type column was found less than shown in column schedule. On one face, the number of rebar was found 3 instead of 4.

Type Column	Upto Grade Beam	Ground Floor, 1st Floor & 2nd Floor	3rd Floor, 4th Floor & 5th Floor
C1			
C2			
C3			



Column Layout



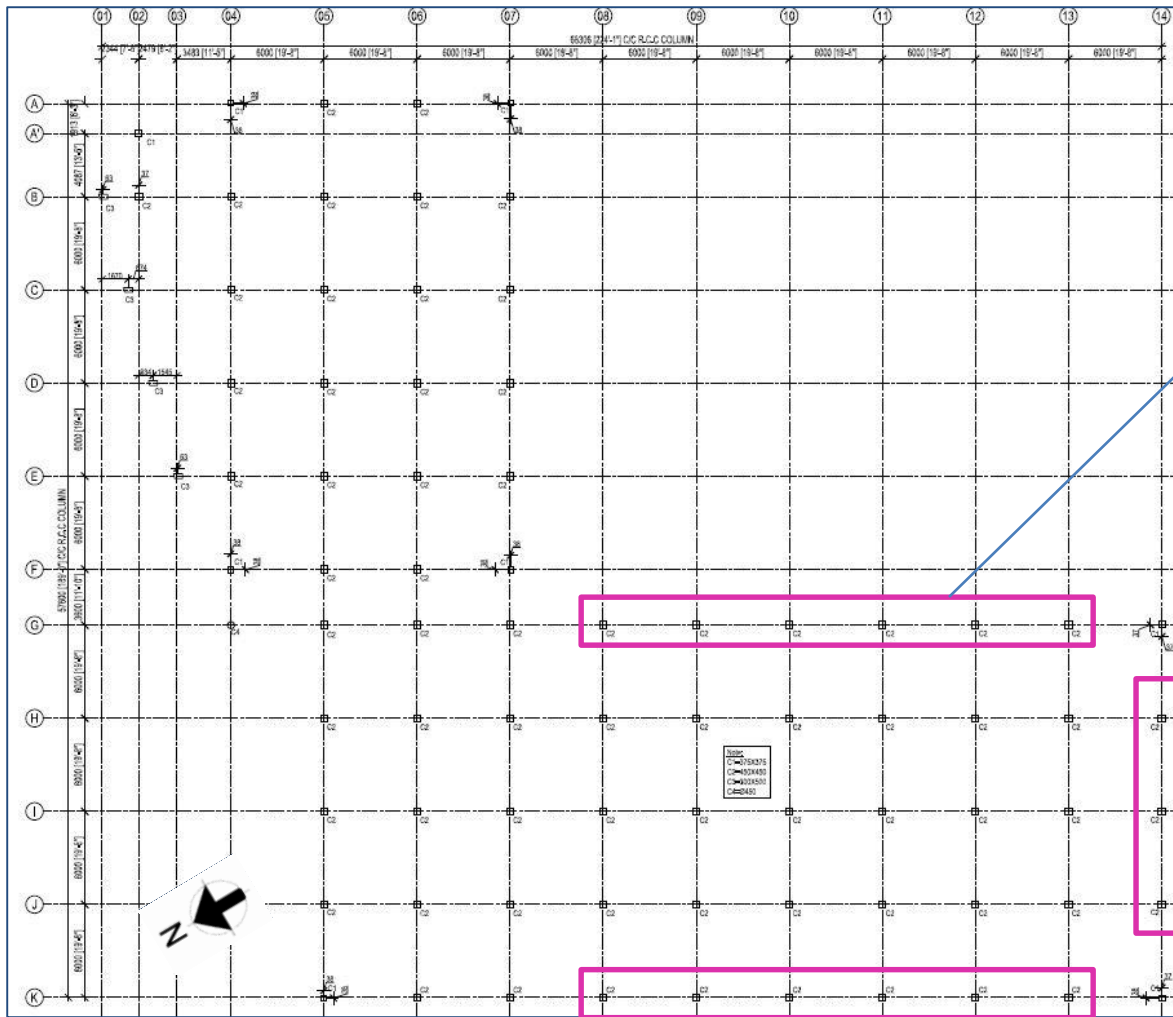
Implement floor load management program



Plan and height restrictions to be introduced by providing signage to prevent future overloading. Maintain loading below 3 kPa until review of design.



Discrepancies in as-built drawings.



Column Layout

Type Column	Upto Grade Beam	Above Grade Beam
C1	 375 375 8-20mmØ (A) Stirrup 10mmØ@125mm CC (B) Stirrup 10mmØ@200mm CC Clear Cover: 75mm	 375 375 8-20mmØ (A) Stirrup 10mmØ@125mm CC (B) Stirrup 10mmØ@200mm CC Clear Cover: 75mm
C2	 450 450 8-20mmØ+4-16mmØ (A) Stirrup 10mmØ@125mm CC (B) Stirrup 10mmØ@200mm CC Clear Cover: 75mm	 450 450 8-20mmØ+4-16mmØ (A) Stirrup 10mmØ@125mm CC (B) Stirrup 10mmØ@200mm CC Clear Cover: 75mm
C3	 580 300 500 10-20mmØ (A) Stirrup 10mmØ@125mm CC (B) Stirrup 10mmØ@200mm CC Clear Cover: 75mm	 580 300 500 10-20mmØ (A) Stirrup 10mmØ@125mm CC (B) Stirrup 10mmØ@200mm CC Clear Cover: 75mm
C4	 450 8-20mmØ (A) Stirrup 10mmØ@125mm CC (B) Stirrup 10mmØ@200mm CC Clear Cover: 75mm	 450 8-20mmØ (A) Stirrup 10mmØ@125mm CC (B) Stirrup 10mmØ@200mm CC Clear Cover: 75mm

Rebar number of exterior column, (C2 type) was found less than mentioned in column schedule. On one face, the number of rebar was found 3 instead of 4.

Observation: Building 7



Problems Observed

Building 6:

- 1: Columns are stressed above normal design limit considering prepared load plan.
- 2: Cracking in cantilever beams.
- 3: Damage at column edge.
- 4: Discrepancies in as-built drawings.
- 5: Implement floor load management program.

Building 7:

- 6: Discrepancies in as-built drawings.



Priority Actions



Item No.	Observation	Recommended Action Plan	Recommended Timeline
1	Columns are stressed above normal design limit considering prepared load plan.(Building 6)	Maintain loading below 3 kPa until further review.	6-weeks
2	Columns are stressed above normal design limit considering prepared load plan.(Building 6)	Factory Engineer to review design, loads and columns stresses in area identified above.	6-weeks
3	Columns are stressed above normal design limit considering prepared load plan.(Building 6)	Verify in situ concrete stresses either by 100mm dia. Cores(Min. 4 nos.) or existing cylinder strength data.	6-weeks
4	Columns are stressed above normal design limit considering prepared load plan.(Building 6)	Produce and actively manage a loading plan for all floor plates within the factory considering floor capacity and column capacity.	6-weeks
5	Columns are stressed above normal design limit considering prepared load plan.(Building 6)	Carry out any remedial works where necessary	6-months



Item No.	Observation	Recommended Action Plan	Recommended Timeline
6	Cracking in cantilever beams.(Building 6)	Building Engineer to check the extent of the cracks and suggest suitable remedial works where necessary.	6-weeks
7	Cracking in cantilever beams.(Building 6)	Carry out any remedial works where necessary.	6-weeks
8	Damage in column edge.(Building 6)	Building engineer is required to check the extent of damage and suggest required remedial work .	6-weeks
9	Damage in column edge.(Building 6)	Carry out any remedial works where necessary.	6-weeks
10	Discrepancies in as-built drawings.(Building 6)	Factory engineer is required to survey all the structural elements properly and produce correct as built drawings.	6-weeks
11	Implement floor load management program.(Building 6)	Implement floor load management program to ensure the structure is not loaded beyond capacity. Limit stack height as per floor load capacity.	6-weeks
12	Discrepancies in as-built drawings.(Building 7)	Factory engineer is required to survey all the structural elements properly and produce correct as built drawings.	6-weeks
13	Discrepancies in as-built drawings.(Building 7)	If the number of rebar found less than the actual design, building is required to review the design & column stresses.	6-weeks