

Sinha Knit Industries Ltd. (10184)

Chamurkhan, P.O - Uttarkhan, P.S – Uttara, Dhaka, Bangladesh.

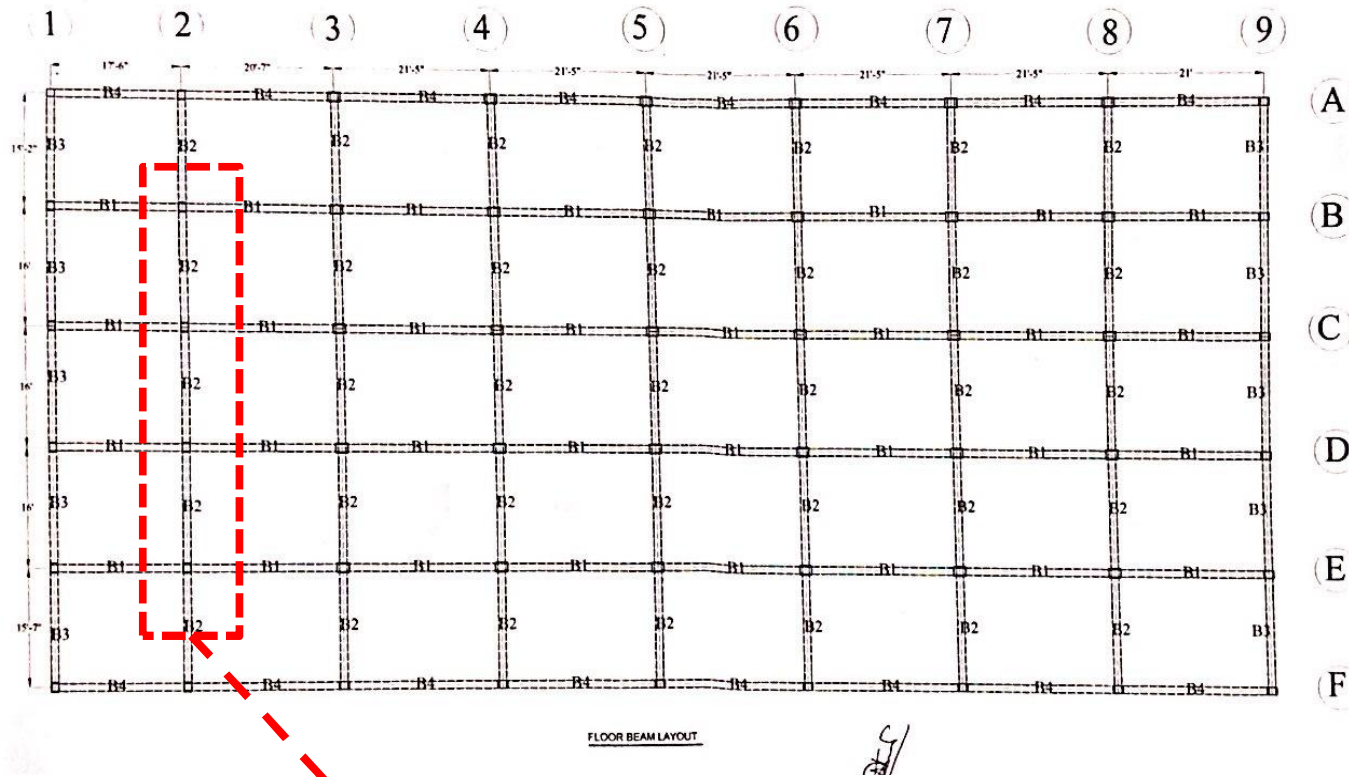
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Identified Priority 3 Concerns

1st Priority 1 Concern



These columns (300x380 mm) on the 2nd grid line have been checked for their loading capacity.

Based on the structural design and the Ferro-scan results, the column reinforcement in some columns appears to be inconsistent with the rebar arrangement at the ground level. According to the load rundown calculation, typical columns have been found to possess marginal loading capacity, thus attaining an 'AMBER' warning.

Column possesses low factor of safety

1st Priority 3 Concern

COLUMN SCHEDULE				
COLUMN SCHEDULE	NO OF TYPE	UP TO F.G.L.	UP TO 6TH FLOOR	TIE
C1	1	15'x18" 10-Ø20	12'x15" 10-Ø20	10mm Ø tie bar
C2	1	15'x18" 12-Ø20	12'x15" 12-Ø20	45 degree Column tie hook details
C3	2	18'x20" 18-Ø20	15'x20" 18-Ø20	

C2	1	15'x18" 12-Ø20	12'x15" 12-Ø20
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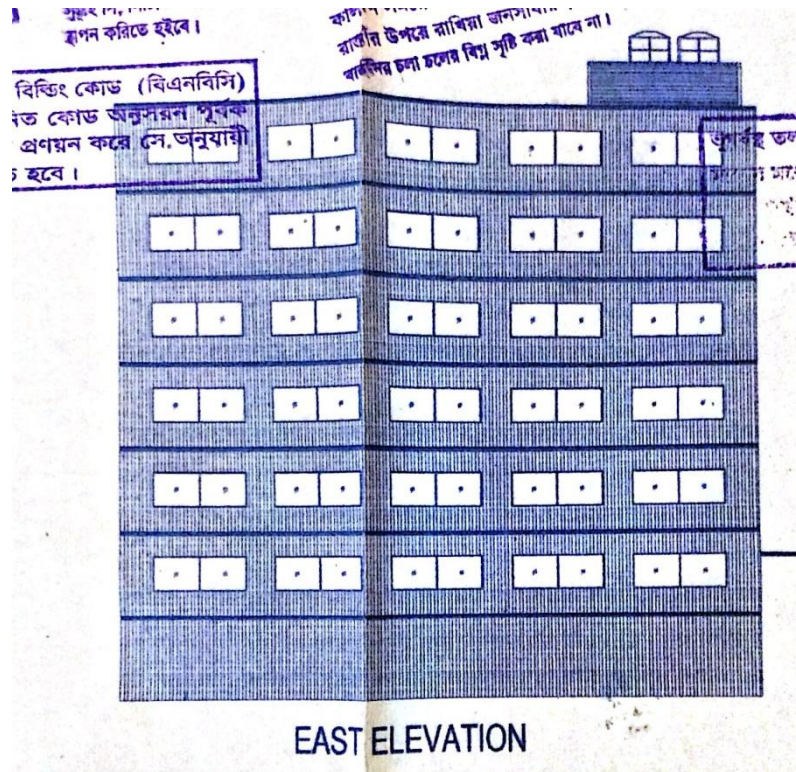
Other than the undersized C2 columns on the 2nd grid line. All other C2 columns have the correct size of 380x460 on all floors.

The columns C2 have been designed with 12 bars of 20mm diameter for all floor levels. However, the Ferro-scan image and picture of those columns on the top floor suggests 10 bars only. Lack of 2 bars leads to a lower factor of safety for those columns.



The structural record is not reliable

2nd Priority 3 Concern



The building was approved for 6 storeys and one basement. The existing building has been finished up to 5 storeys high. The addition of one more floor has been planned. Reinforcement is left exposed at the upper levels intentionally for the vertical extension. This future extension may cause a significant increase in column loads which would need to be fully checked. All columns C2 on the 2nd grid line have very low factors of safety with regard to their loading capacity. This is mainly due to a lower level of reinforcement than specified. Thus, adding one more floor could result in even greater overstressing. With our preliminary calculation, the smaller columns C2 on 2nd grid line can not be able to sustain the additional load from future extension without any strengthening work for those columns.

Problems Observed Summary

ITEM 1: (1st Priority 1) Column load rundown indicates that the columns on 2nd grid line appear to have very low factors of safety with respect to their loading capacity.

ITEM 2: (1st Priority 3) The structural drawings are not reliable to be considered as structural record drawings.

ITEM 3: (2nd Priority 3) Possible future vertical extension has been planned. This could leads to overstressed for those smaller column C2 on 2nd grid line.

Item 1 and actions

The Column load rundowns indicate that the columns on the 2nd grid line have very low factors of safety.

Priority 1 (Immediate – Now)

- None required

Priority 2 (within 6 – weeks)

- Carry out a full Detailed Engineering Assessment of the entire building including any intrusive testing required.
- Carry out full survey of all structural elements to check the loading capacity of the overall structural system.
- The Factory Engineer to review design, loads and columns stresses in entire building in accordance with BNBC regulations

Priority 3 (within 6-months)

- Develop and maintain a set of floor loading plans.

Item 2 and actions

The structural drawings are not consistent with the as built structural system.

Priority 1 (Immediate – Now)

- None required

Priority 2 (within 6 – weeks)

- Carry out the steps as noted in Item 1 for structural survey

Priority 3 (within 6-months)

- Based on the building survey, building engineer to develop full structural records and check for compliance with BNBC codes.

Item 3 and actions

The possibility of a future vertical extension will only lead to further overstressing of the structural system.

Priority 1 (Immediate – Now)

- None required

Priority 2 (within 6 – weeks)

- None required

Priority 3 (within 6-months)

- Any further extensions or structural modifications of the existing building needs to be investigated fully by a Structural Engineer and it should be in full compliance with the BNBC codes.