

Man's Attires Ltd. (10792)

Hosiery Ind. Estate, Pl. A-87, Eyanet Nagar, Fatullah, Naranganj

(+23.623549N, 90.479019E)

26.05.2014



Identified Priority 1 Concerns

Concrete columns are found to be overstressed due to additional loading above the original 6th storey roof and due to discrepancies in the column construction.

Fairly heavy loading is noted at several locations, which is a concern in light of the column overstress.

1st Priority 1 Concern: Columns are overstressed



Left; removed plaster on a critical internal column, to establish aggregate type. Below; column schedule, apparently indicating more bars than were present on site, following scans.

Internal columns at the ground floor are indicated as type C3 but only measure 14" x 14" (356mm x 356mm) on site.

Furthermore, our Ferrosan only found 10 bars rather than the 12 indicated on the plans.

Lastly, an additional storey has been added as well as cantilevers at the façades, thus generating more compressive load.

These factors add up to an 'Amber' rating for the columns, requiring load management and further investigation.

COLUMN SCHEDULE

CONCRETS STRENGTH $f_c = 3500$ PSI. (1:1.5:3)

S.L. NO	COLUMN	UP TO G.L.	GRO. TO 5TH. FLOOR.	ROD	TIES
C-1		14"X14"	12"X12"	10-20mmØ BAR	10 mmØ@4"c/c
C-2		16"X16"	14"X14"	12-20mmØ BAR	10 mmØ@6"c/c 10 mmØ@4"c/c
C-3		20"X16"	18"X14"	14-20mmØ BAR	10 mmØ@6"c/c 10 mmØ@4"c/c

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DETAILS STRUCTURAL DESIGN OF 6-STORIED INDUSTRIES
BUILDING PLAN FOR
M/S FATIMA TEXTILE ON PLOT NO-A-87 BOGGHOSERY VE AT
CHADDONG
PANCHABATI, DIST. NARAYANGANJ

OWNERS NAME:-
M/S FATIMA TEXTILE

DESIGN BY: Eng. A. J. M. SHAFI
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SHEET
NO. 03

2nd Priority 1 Concern: Presence of heavy loads



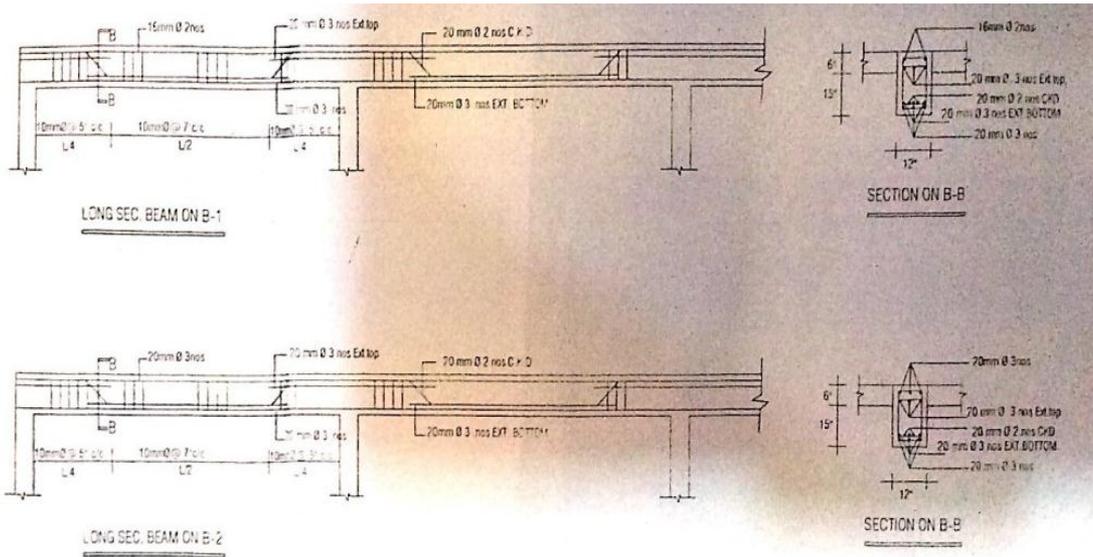
At several locations throughout the building, large superimposed loads due to storage, material wastage, or heavy partitions are noted. These loads should be evacuated down to 2.0 kPa. Furthermore, unless the DEA confirms the capacity of the structure, heavy partitions should be removed and replaced by lightweight construction.



Identified Priority 2 Concerns

Extensive cracking of beams at 5th and 6th floors.

1st Priority 2 Concern: Extensive cracking of floor beams



Visual inspection of the last two storeys uncovered significantly more cracking in floor beams and slab than what is usually observed in buildings of this type.

Several cracks were sounded and chipped-out to reveal crack widths which are not necessarily indicative of structural distress, but this nonetheless remains a concern. Measurements revealed that the depth of the down-stand beams at the last two storeys is less than at the lower storeys (lower storeys are as per plan extract shown), and Ferrosan showed less reinforcing than what is indicated on the drawings.

These cracks must be carefully monitored, and the load on the last two storeys and the roof must be limited unless a complete Detailed Engineering Assessment validates the load capacity of these beams.

Identified Priority 3 Concerns

None Identified.

Overall Stability System



The building is entirely concrete-framed, with a beam-and-column construction providing moment frame action. However the extra height of the ground floor is a concern as is the discrepancy in column size with the original drawings.

We require that the lateral stability of the building be investigated in a Detailed Engineering Assessment

Water Ingress at Roof Level



No waterproofing system was present at roof level. Although no signs of water ingress were observed, the building owner may wish to apply a waterproofing membrane to prevent future issues of water ingress and related structural degradation.

Priority Actions

Problems Observed Summary

ITEM 1: (Priority 1) Concrete columns are found to be overstressed due to additional loading above the original 6th storey roof and due to discrepancies in the column construction.

ITEM 2: (Priority 1) Fairly heavy loading is noted at several locations, which is a concern in light of the column overstress.

ITEM 3: (Priority 2) Extensive cracking of beams at 5th and 6th floors.

Item No.	Observation	Recommended Action Plan	Recommended Timeline
1	Concrete columns are found to be overstressed due to additional loading above the original 6th storey roof and due to discrepancies in the column construction.	Limit loading, see Item 2. Verify insitu concrete stress by 100mm dia. Cores. A Detailed Engineering Assessment of factory to be commenced, see attached scope.	Immediate – Now
2	Concrete columns are found to be overstressed due to additional loading above the original 6th storey roof and due to discrepancies in the column construction.	Produce and actively manage a loading plan for all floor plates within the factory, giving consideration to floor and column capacity. Detailed Engineering Assessment to be completed.	6-weeks
3	Concrete columns are found to be overstressed due to additional loading above the original 6th storey roof and due to discrepancies in the column construction.	Continue to implement load plan. Implement any strengthening recommended by the DEA.	6-months
4	Fairly heavy loading is noted at several locations, which is a concern in light of the column overstress.	Limit all loading to the current levels. Evacuate all storage down to the ground floor.	Immediate – Now
5	Fairly heavy loading is noted at several locations, which is a concern in light of the column overstress.	Unless otherwise permitted by the DEA (Item 1) remove all masonry partitions and walls from the partial seventh storey and replace with BNBC compliant lightweight construction.	6-weeks
6	Fairly heavy loading is noted at several locations, which is a concern in light of the column overstress.	Continue to implement load plan.	6-months
7	Extensive cracking of beams at 5th and 6th floors.	See Item 2 regarding loading. Inform factory supervisory personnel of the importance of these cracks and implement weekly visual monitoring.	Immediate – Now
8	Extensive cracking of beams at 5th and 6th floors.	Include these floor structures in the DEA. Implement any corrective measures found to be necessary.	6-weeks
9	Extensive cracking of beams at 5th and 6th floors.	Continue to implement load plan.	6-months