

Muazuddin Textile Ltd. (9998)

Plot # 235/236, East Chandura, Shafipur, Kaliakor, Gazipur

(+ 24.033822N, 90.272279E)

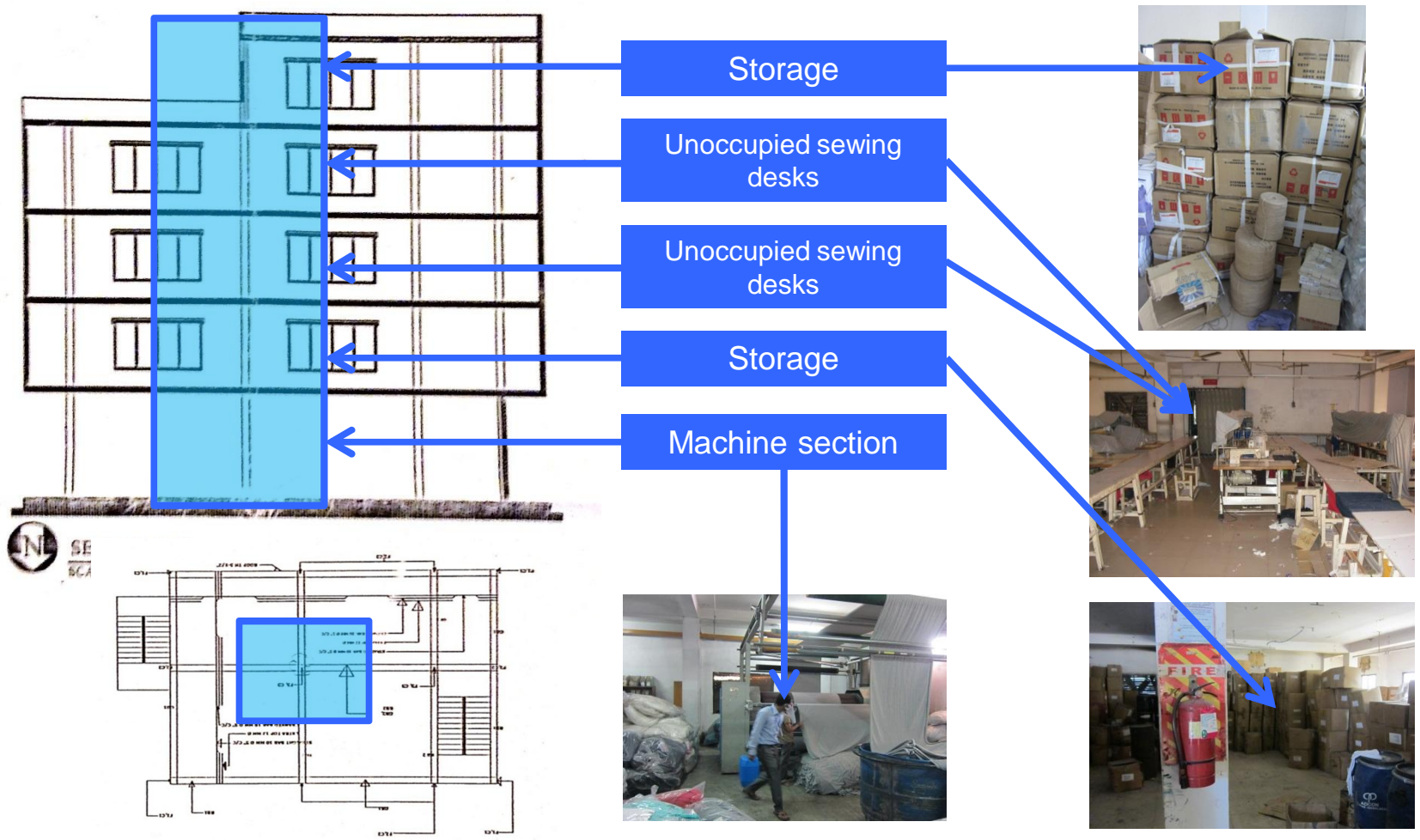
12.APRIL.2014



Identified Priority 1 Concern

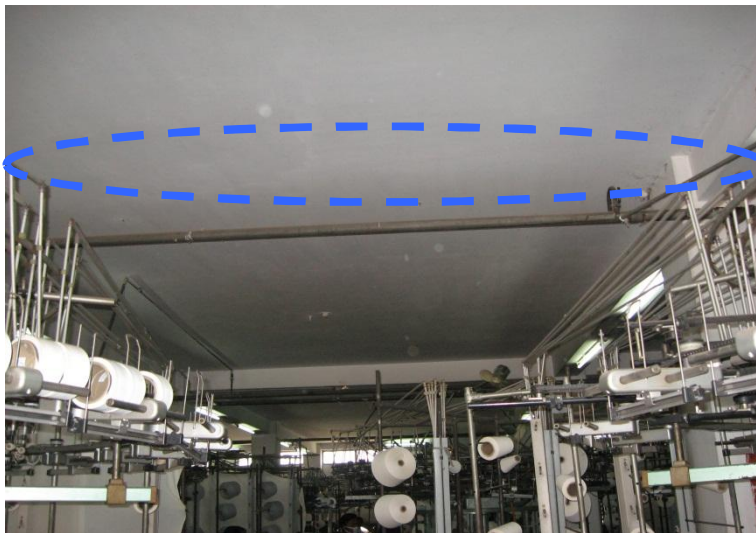
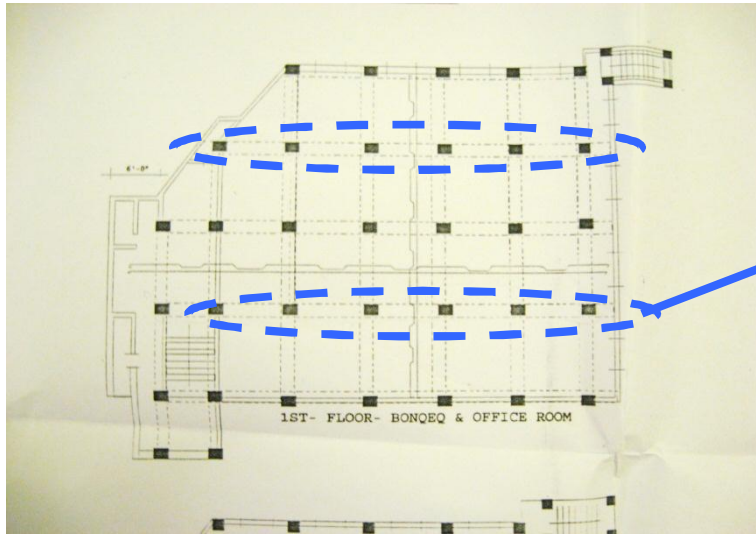
Columns appear to be overstressed (building 2)
and construction documents do not match the actual
building conditions (building 1 & 2)

1st Priority 1 Concern



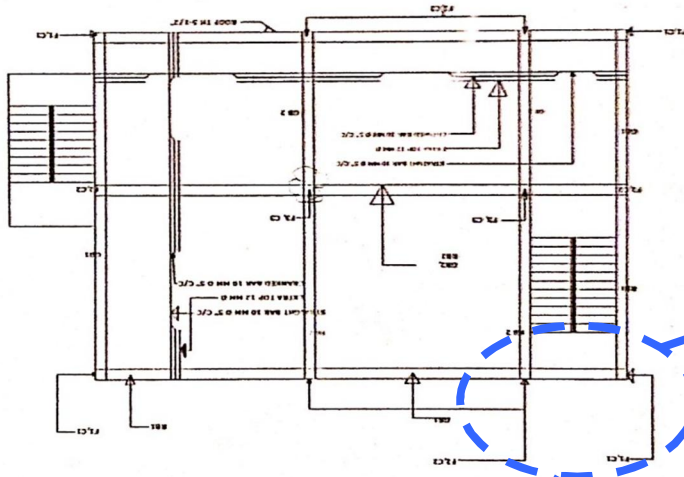
The interior column was supporting part the 4 part 5 storey building section above. However its size beneath the ground floor (column pier) was only 300x300mm - as specified in the drawing. From the calculation check, this column appears to be overstressed.

2nd Priority 1 Concern



Two lines of the beam at 1st floor of Building 1 are not present. This is inconsistent with what specified on the provided drawings.

3rd Priority 1 Concern



There are cantilevered slabs that do not appear on the structural drawings for Building 2.

Identified Priority 2 Concerns

Adequacy of roof supporting (auxiliary buildings) and the stability and capacity of the connecting bridge (building 1)

No movement joint properly established to separate buildings

Cracks on top of the ground floor slab (the ground floor slab is suspended)

1st Priority 2 Concern



Concerns on roof's point load acting in the middle of RC beam where the depth of the beam is 250 mm spanning 3.50 m.



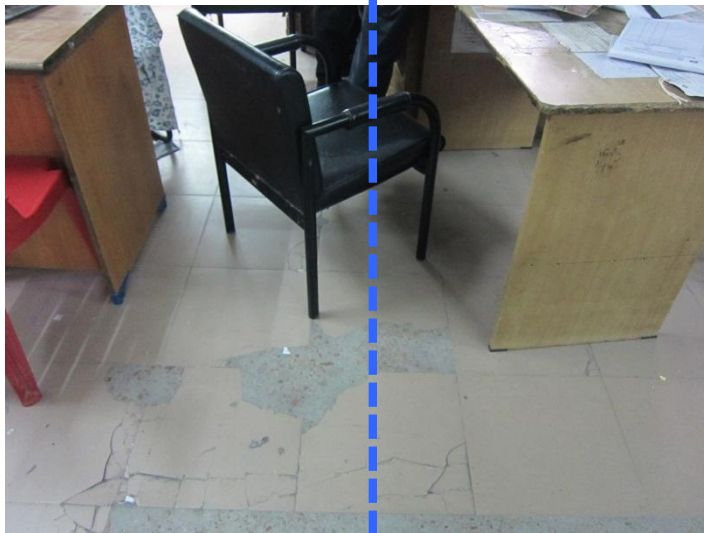
Slots for the support of steel rafters for boiler building are provided but there are no anchor bolts installed.

2nd Priority 2 Concern



There are connecting bridges between Building 1 of Muazuddin Textile Ltd. and Muazuddin Knit Fashion Ltd. Building. The stability and capacity of these elements and the related structure should be investigated.

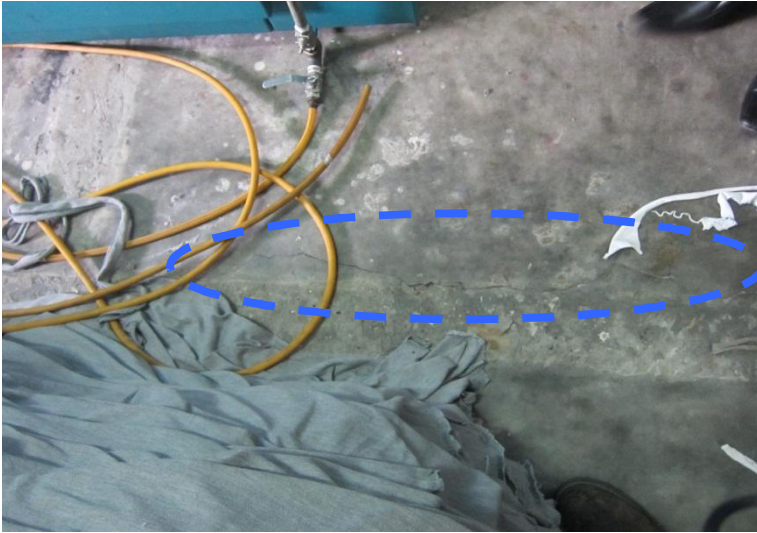
3rd Priority 2 Concern



The factory buildings were constructed separately but no movement joint appears in the attached zone, between them.

----- Movement joint to be established properly

4th Priority 2 Concern



There are cracks on the top of ground floor slabs in Building 2. The ground floor slab is suspended.

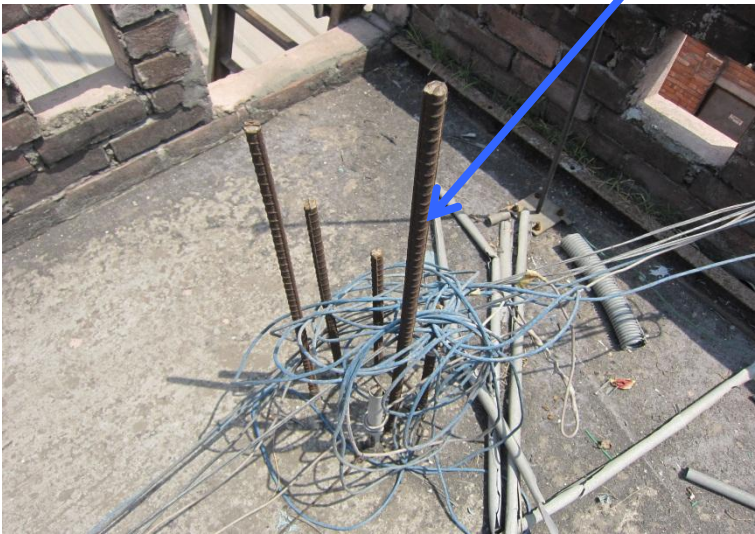
Identified Priority 3 Concern

Reinforcement left exposed
and no fireproofing material

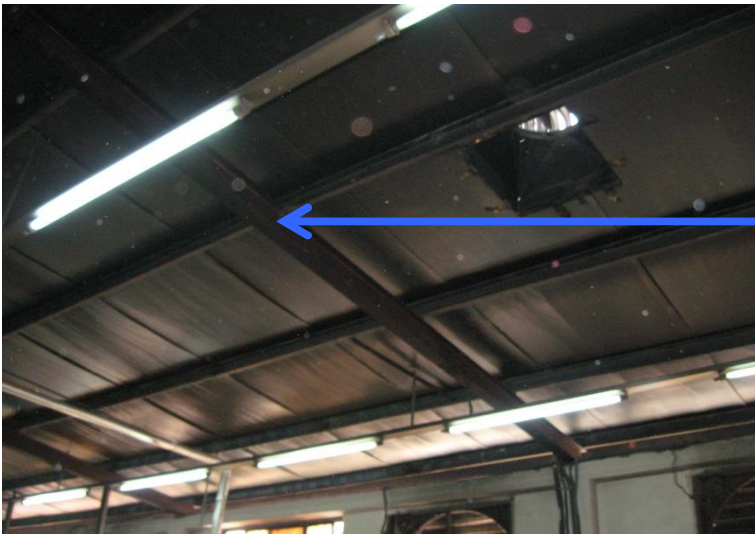
1st Priority 3 Concern



Reinforcement is left exposed. It is unclear whether rust proof paint is applied.



2nd Priority 3 Concern



Structural steel elements in all buildings - confirmation whether fire proofing material is required.

Overall stability system / moment frame capacity



Concerns on the stability system for lateral loading and seismic loading. Façade brickwork walls - lack of moment capacity in connections between columns and beams.

We require that these items be investigated in a Detail Engineering Assessment.



Water ingress



Evidence of water ingress was found. Some areas have mould. These may lead to deterioration and/or spalling of concrete in the future.



Water ponding was found on the roof slab. And no waterproofing material was applied in this area.

Priority Actions

Problems Observed Summary

- ITEM 1: (Priority 1) Building 2: Columns appeared to be overstressed.
- ITEM 2: (Priority 1) Building 1 & 2: Construction documents not match the actual building conditions.
- ITEM 3: (Priority 2) Auxiliary buildings: Adequacy of roof and supports.
- ITEM 4: (Priority 2) Building 1: Stability and capacity of connecting bridge.
- ITEM 5: (Priority 2) No movement joint properly established to separate buildings
- ITEM 6: (Priority 2) Cracks on top of ground floor slab
- ITEM 7: (Priority 2) Overall stability system / moment frame capacity.
- ITEM 8: (Priority 2) Evidence water ingress
- ITEM 9: (Priority 3) Reinforcement left exposed
- ITEM 10: (Priority 3) No fireproofing material.
- ITEM 11: (Priority 3) No waterproofing material

Item 1 and actions

Building 2: Columns appeared to be overstressed.

Priority 1 (Immediate – Now)

- Remove loading on 4th floor immediately and reduce stacking height to ensure total load does not exceed 1.0kPa on 1st floor to 3rd floor.
- Factory Engineer to review design, loads and columns stresses in area identified above.
- Verify in-situ concrete stresses either by cores or existing cylinder strength data for [the identified columns / cores from 4 columns]. Core sizes to be a minimum of 100 mm diameter.
- A Detail Engineering Assessment of Factory to be commenced immediately.

Priority 2 (within 6 – weeks)

- Produce and actively manage a loading plan for all floor plates within the factory giving consideration to floor capacity and column capacity.
- *A Detailed Engineering Assessment to be completed.*

Priority 3 (within 6-months)

- Continue to implement load plan.

Item 2 and actions

Building 2: Construction documents not match the actual building conditions.

Priority 1 (Immediate – Now)

- Remove all storage loading from these areas.
- Factory Engineer to review design, loads, columns stresses to confirm suitability for applied loads.

Priority 2 (within 6 – weeks)

- Verify in-situ concrete stresses either by cores or existing cylinder strength data for affected zone.
- Detail Engineering Assessment to be completed.
- Produce and actively manage a loading plan for all floor plates within the storage building giving consideration to floor capacity and column capacity.

Priority 3 (within 6-months)

- Continue to implement load plan

Item 3 and actions

Auxiliary buildings: Adequacy of roof and supports.

Priority 1 (Immediate – Now)

- None required.

Priority 2 (within 6 – weeks)

- Factory Engineer to review design, loads, roof and supports in area identified.
- Engineer to inspect roof supports and structure related to their function and propose a suitable repair if necessary.

Priority 3 (within 6-months)

- None required.

Item 4 and actions

Building 1: Stability and capacity of connecting bridge.

Priority 1 (Immediate – Now)

- None required.

Priority 2 (within 6 – weeks)

- Detail Engineering Assessment to be carried out in particular the stability and capacity of connecting bridge.

Priority 3 (within 6-months)

- Continue to implement loading plan. A Detailed Engineering Assessment is to be completed.

Item 5 and actions

No movement joint properly established to separate buildings.

Priority 1 (Immediate – Now)

- None required.

Priority 2 (within 6 – weeks)

- The Factory's Building Structural Engineer should carry out a Detailed Engineering Assessment to prove the capacity of the building in its existing state, a further building approval should be gained for the building as it exists, as altered since the original approval. Alternatively, the extension building should be separated by a non-structural joint and allowed to act as a fully structurally independent structure.

Priority 3 (within 6-months)

- Do not construct any further buildings connected to the existing factory, without thorough structural design and full building approval.

Item 6 and actions

Cracks on top of ground floor slab.

Priority 1 (Immediate – Now)

- None required.

Priority 2 (within 6 – weeks)

- The Detail Engineering Assessment of this area to be carried out.
- The distress found is recommended to be repaired with proper methods. Repair by simple over-plastering work is not allowed.

Priority 3 (within 6-months)

- Maintain standards of quality control to ensure that loading plan is correctly followed so that problems do not arise in the future.

Item 7 and actions

Overall stability system / moment frame capacity.

Priority 1 (Immediate – Now)

- None required.

Priority 2 (within 6 – weeks)

- Request that the Detail Engineering Assessment of the overall building to be carried out and in particular, stability and foundation aspects should be investigated in detail.

Priority 3 (within 6-months)

- None required.

Item 8 and actions

Evidence water ingress.

Priority 1 (Immediate – Now)

- None required.

Priority 2 (within 6 – weeks)

- For both serviceability and durability, it's recommended to repair the ingresses found with suitable methods.
- After repairing, suitable waterproofing material should be applied.

Priority 3 (within 6-months)

- Ensure that an appropriate layer of waterproofing is included on the final roof slab.

Item 9 and actions

Reinforcement left exposed.

Priority 1 (Immediate – Now)

- None required.

Priority 2 (within 6 – weeks)

- None required.

Priority 3 (within 6-months)

- Engineer to inspect the reinforcement where corrosion has occurred.
- For both durability and serviceability, rust proof paint is recommended.

Item 10 and actions

No fireproofing material applied for structural steel.

Priority 1 (Immediate – Now)

- None required.

Priority 2 (within 6 – weeks)

- None required.

Priority 3 (within 6-months)

- Fireproofing material for structural steel element is to be applied if required.
- Maintain standard of quality control.

Item 11 and actions

No waterproofing material applied on the roof slab.

Priority 1 (Immediate – Now)

- None required.

Priority 2 (within 6 – weeks)

- None required.

Priority 3 (within 6-months)

- Engineer to inspect water damaged structure including the exterior and propose a suitable repair.
- For both durability and serviceability, waterproofing on the roof slab is recommended. Moreover the roof slab drainage system should be investigated.