

Experience Clothing Co., Ltd. (9224)

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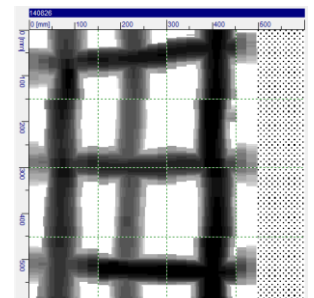
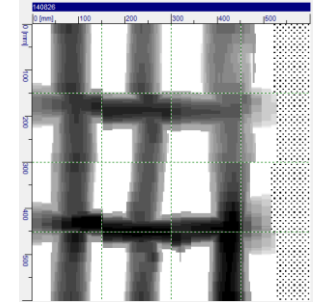
26.AUGUST.2014



Identified Priority 1 Concerns

- The internal columns at ground level at Building A between grid line A'-E'/6'-9' appear to be overstressed.
- Uncontrolled heavy storage loading on 3rd floor of Building B.

The internal columns at ground level of Building A, shown below, appear to be overstressed. The size of this column is 450 x 450 mm at ground level and carry 5 storeys of Building A with 8.15 m and 8.00 m length spans.



From the information above, for Building A, 5 storeys, the calculation check of these columns show that they appear to be overstressed (FoS = **1.25**).

Remark: The sizes of the column's rebar are assessed to be similar to those specified on the structural drawings.

	In situ	Drawing
Size	450 x 450 mm	500 x 500 mm
Vertical rebar	8-Ø25mm +4-Ø20mm (2.21%)	8-Ø25mm +12-Ø20mm (3.08%)
Aggregate	Stone	Stone



Building B



Building B



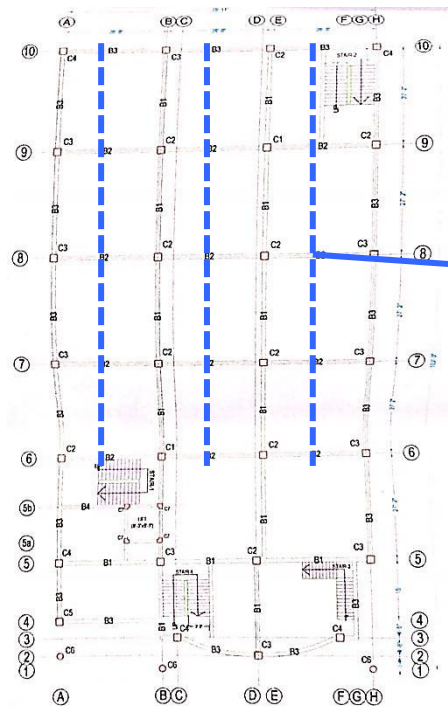
Building B

Uncontrolled heavy storage loading was found on 3rd floor at Building B. We believed the loading on storage area to be 5.0 kPa (11 kg per box, 0.60 x 0.40 m footprint, 11 boxes per stack). Loading in these area should be reduced to 2.0 kPa. We require that these items be investigated in a Detailed Engineering Assessment. Loading plans should be displayed in these areas.

Identified Priority 2 Concerns

- Inadequacies between the drawings and the actual as-built conditions.
 - Cracks on 3rd floor beams of Building A.
 - Capacity check of roof slab supporting water tanks in Building A.
- Concerns with the structural steel connections of Building B.
 - No fireproofing material for structural steel elements (if required).

1st Priority 2 Concern



There are sub beams noted at mid span at Building A as shown.

Building A



Building A



The size of columns and beams measured in situ do not match those specified in the structural drawings of Building A.

There is no yield strength of steel or steel grade specified in the structural drawings of Building B.

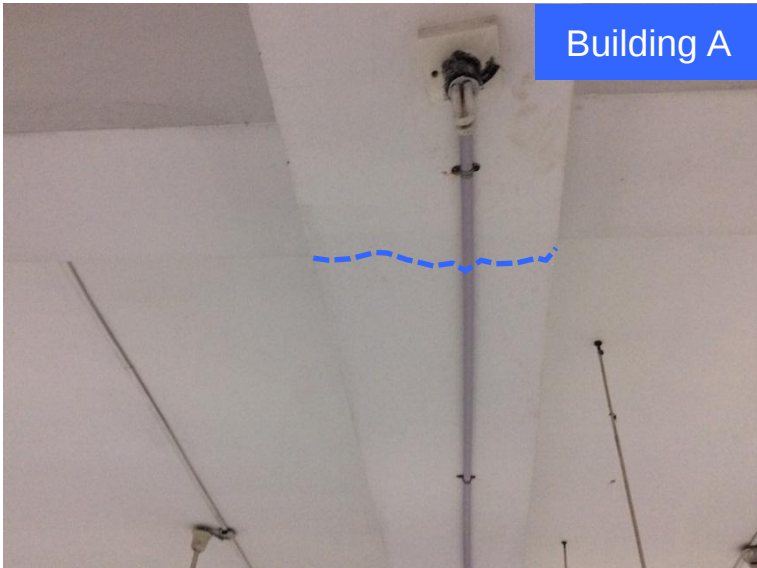
The structural drawings of Building A and Building B need to be revised.

Building A



Cracks on 3rd floor beams at Building A. The cause of cracks should be investigated by appropriate methods and then repaired.

Building A



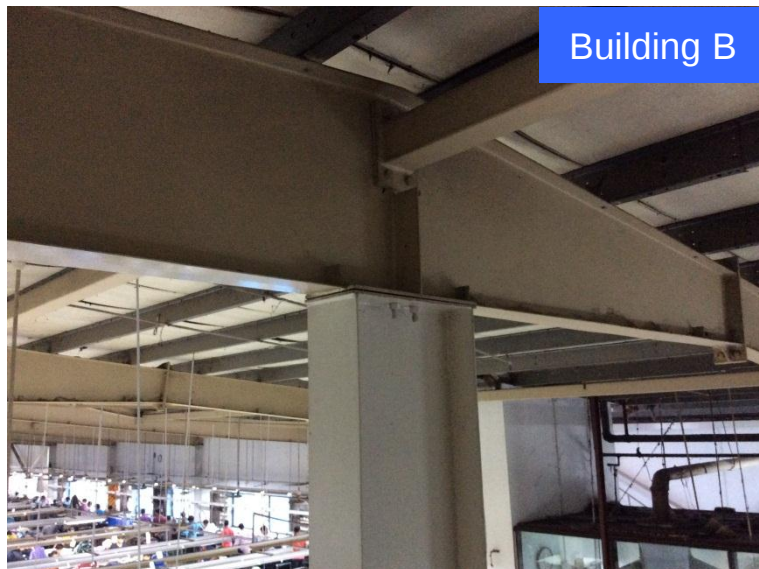
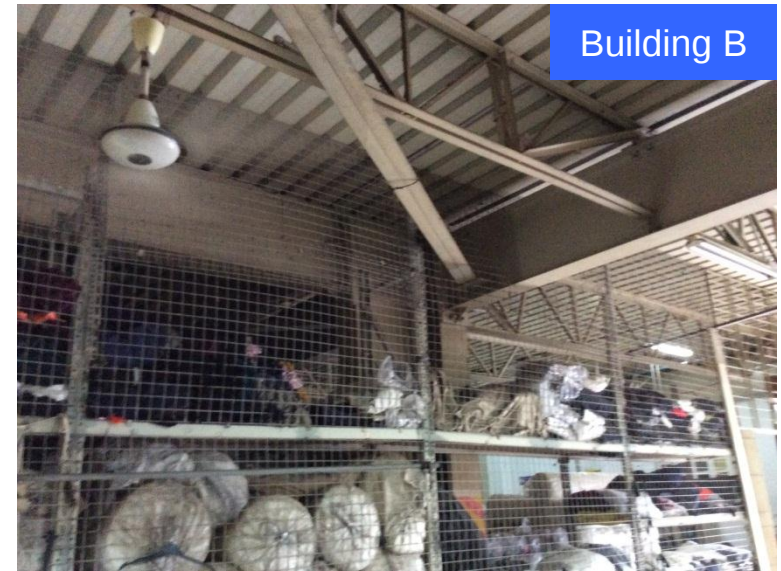


Concerns on the roof slab supporting water tanks. A capacity check of these slabs and all related elements need to be carried out.





Concern on structural steel connections at Building B. Some bolts were missing at the connections. These items need to be checked and rectified.



No fireproofing material was noted on structural steel elements (if required).

Identified Priority 3 Concerns

(None)

Overall Stability System

Building A



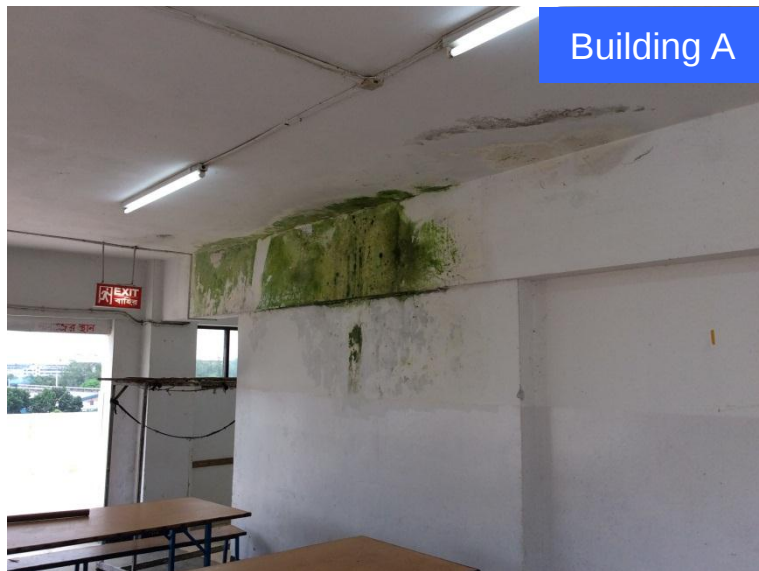
The lateral loading resistance for Building 1, a 5-storey building is provided by moment frame action without any shear wall and the façade brickwork walls lack moment capacity due to their poor connections with the surrounding columns and beams.

We require that the stability of Building A is investigated as part of a Detailed Engineering Assessment.

Building A



Water Ingress



Water distress was noted on slabs, beams, columns and walls at Building A. Water ponding were also found on the top level of Building A.

Priority Actions

Problems Observed Summary

- | | | |
|---------|--------------|---|
| ITEM 1: | (Priority 1) | The internal columns at ground floor level of Building A between grid line A'-E'/6'-9' appear to be overstressed. |
| ITEM 2: | (Priority 1) | Uncontrolled heavy storage loading on 3 rd floor of Building B. |
| ITEM 3: | (Priority 2) | Inadequacies between the drawings and the actual as-built conditions. |
| ITEM 4: | (Priority 2) | Cracks on 3 rd floor beams of Building A. |
| ITEM 5: | (Priority 2) | Capacity check of roof slab supporting water tanks in Building A. |
| ITEM 6: | (Priority 2) | Concern with structural steel connections of Building B. |
| ITEM 7: | (Priority 2) | No fireproofing material on any structural steel elements (if required). |
| ITEM 8: | (Priority 2) | Overall stability system. |
| ITEM 9: | (Priority 3) | Distress due to water ingress. |

Item No.	Observation	Recommended Action Plan	Recommended Timeline
1	Priority 1 - The internal columns at ground floor level of Building A between grid line A'-E'/6'-9' appear to be overstressed.	Remove any loading applied on this area on 4th floor. Maintain and control the floor loading on 1st floor to 3rd floor to a maximum of 2.0kPa. Factory Engineer to review design, loads and columns stresses in area identified above. Verify insitu concrete stresses either by 100mm dia. cores or existing cylinder strength data for [the identified columns] or [100mm dia. cores from 4 columns]. A Detailed Engineering Assessment of Factory to be commenced, see attached scope.	Immediate – Now
2	Priority 1 - The internal columns at ground floor level of Building A between grid line A'-E'/6'-9' appear to be overstressed.	Produce and actively manage a loading plan for all floor plates within the factory giving consideration to floor capacity and column capacity. The Detailed Engineering Assessment to be completed.	6-weeks
3	Priority 1 - The internal columns at ground floor level of Building A between grid line A'-E'/6'-9' appear to be overstressed.	Continue to implement load plan. Carry out fully any and all recommendations of the DEA.	6-months
4	Priority 1 - Uncontrolled heavy storage loading on 3rd floor of Building B.	Reduce stacking height to ensure total load does not exceed 2.0 kPa. A Detailed Engineering Assessment is required to review the design and loads. Factory Engineer to state the maximum weight that is allowed per square meter. Suggest that state the value on notice boards in these areas. (Loading Plans).	Immediate – Now
5	Priority 1 - Uncontrolled heavy storage loading on 3rd floor of Building B.	Adopt some sort of signage/staff guidance to ensure that the maximum weight of storage is not exceeded. (Loading Plans).	6-weeks
6	Priority 1 - Uncontrolled heavy storage loading on 3rd floor of Building B.	Maintain standards of quality control to ensure that storage procedures are correctly followed so that overloading problems do not arise in the future. Maintain and implement Loading Plans.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
7	Priority 2 - Inadequacies between the drawings and the actual as-built conditions.	Factory Engineer to survey the actual conditions and revise the drawings. Any results of the Detailed Engineering Assessment which affect the structure should be taken on board.	6-weeks
8	Priority 2 - Inadequacies between the drawings and the actual as-built conditions.	Continue to implement load plan.	6-months
9	Priority 2 - Cracks on 3rd floor beams of Building A.	The Factory Engineer to investigate the cause of cracks by appropriate methods. The distress found is to be suitably rectified and then repaired.	6-weeks
10	Priority 2 - Capacity check of roof slab supporting water tanks in Building A.	Factory Engineer to review design, loads and related elements in area identified above to confirm capacity for these items. Or The items in the area identified above should be removed.	6-weeks
11	Priority 2 - Concern with structural steel connections of Building B.	Factory Engineer to check these items in the area identified above and rectify with a suitable methods.	6-weeks
12	Priority 2 - No fireproofing material on any structural steel elements (if required).	Fireproofing material for structural steel element is recommended as suggested in BNBC Codes. Maintain standard of quality control and protection of the fire protection.	6-weeks
13	Priority 2 - Overall stability system.	A Detailed Engineering Assessment of the overall building to be carried out and in particular, stability and foundation aspects should be investigated in detail.	6-weeks
14	Priority 2 - Overall stability system.	Any recommendations of the DEA are to be completed fully.	6-months
15	Priority 3 - Distress due to water ingress.	Factory Engineer to inspect water damaged structures and repair with a suitable methods. Waterproofing on the roof slab is to be applied. Moreover the roof slab drainage system should be investigated and improved.	6-months