River Side Sweaters Ltd. (10343)

Hasnabad super market, Keranigonj, Dhaka

(+ 23.682478N, 90.420922E)

31.MAY.2014

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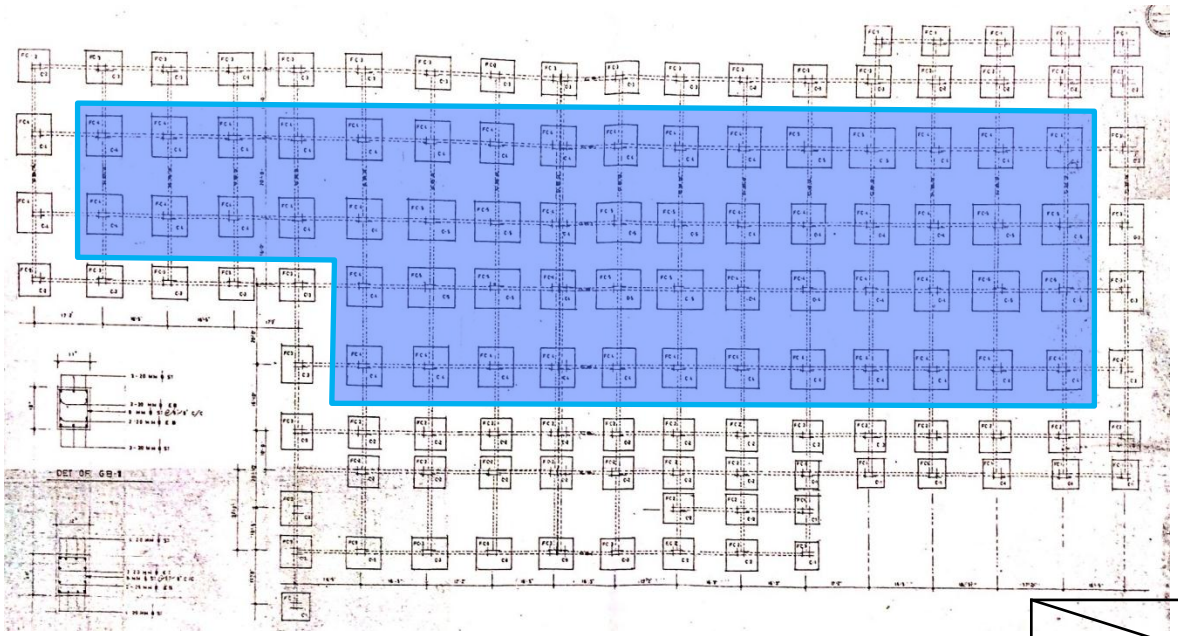
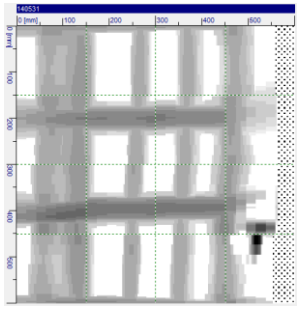
Identified Priority 1 Concerns

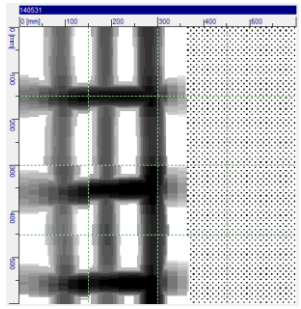
- If the full construction of 9 storeys is built, the internal columns at basement level will be overstressed.
- Stability and capacity checks of structural elements supporting advertising board at roof level.

1st Priority 1 Concern

If the full construction of the 9 storeys is completed, the internal columns on basement floor shown in the picture below appear will be overstressed. The size of column is 21” x 14” at basement floor and will carry a full 9 storeys of building spanning 16’ to 20’ and 16’5” to 17’2” .







	In situ
Size	21” x 14”
Vertical rebar	12 – φ 16 mm (1.31%)
Aggregate	Brick

From the information above, for 9 storeys, the calculation check of typical columns show that they will be overstressed (FoS = **0.94**).

Remark: The size of column’s rebar at basement floor is assumed to be similar to the size of column’s rebar which left exposed on the top level.

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2nd Priority 1 Concern

Advertising board was installed at roof level. Capacity and stability check of these items and related elements should be carried out.

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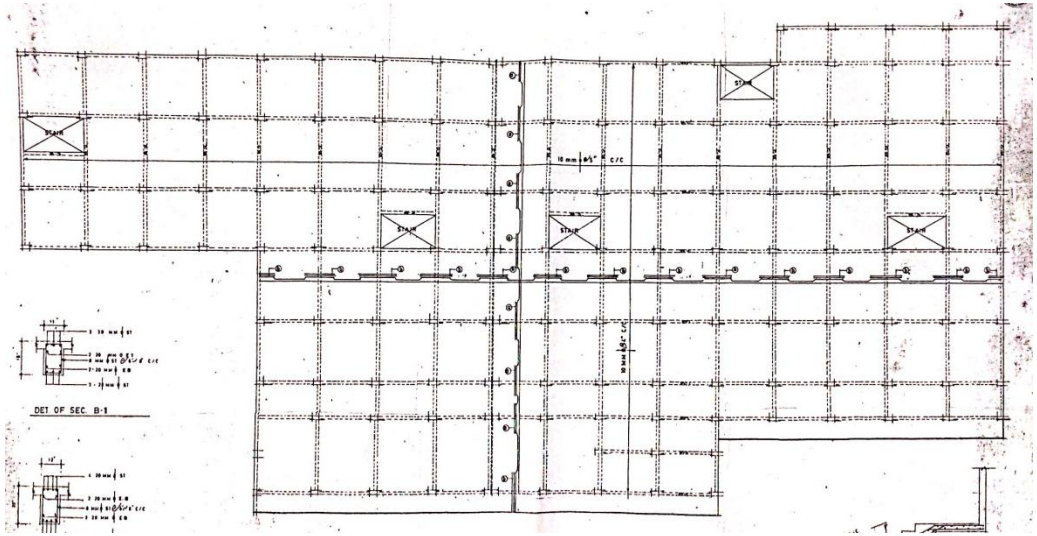
Identified Priority 2 Concerns

- Inconsistencies between the drawings and the actual as-built conditions.
- Stability and capacity check of roof slab supporting water tanks.
- Stability and capacity check of brick wall supporting roof elements.
- No fireproofing material applied for structural steel elements (if required).

1st Priority 2 Concern



Some beams shown on the drawings were not found on-site.
No column schedule was available.

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2nd Priority 2 Concern

Water tanks of 5000 litres capacity were installed at roof level. Capacity and stability checks of the roof slab locally and any related elements should be carried out.

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3rd Priority 2 Concern

There are concerns on brick wall supporting roof elements. Capacity and stability check of these items and any related elements should be carried out.

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4th Priority 2 Concern

No fireproofing material was noted on structural steel elements of the roof shed. It is unclear whether this is required by BNBC.

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Identified Priority 3 Concerns

- Reinforcement left exposed at roof level.

1st Priority 3 Concern

Reinforcement is left exposed at roof level.

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Overall Stability System

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Concerns on the stability system for lateral loading. Façade brickwork walls lack any moment capacity between columns and beams.

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

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Water Ingress

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Distress due to water ingress was noted at the movement joint including water ponding on the roof slab.

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Priority Actions

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Problems Observed Summary

ITEM 1:	**(Priority 1)**	**In case of the full construction of the originally planned 9 storeys, internal columns on basement floor will be overstressed.**
ITEM 2:	**(Priority 1)**	**Stability and capacity check of the structural elements supporting advertising board at roof level.**
ITEM 3:	**(Priority 2)**	**Inconsistencies between the drawings and the actual as-built conditions.**
ITEM 4:	**(Priority 2)**	**Stability and capacity check of roof slab supporting water tanks.**
ITEM 5:	**(Priority 2)**	**Stability and capacity check of brick wall supporting roof elements.**
ITEM 6:	**(Priority 2)**	**No fireproofing material applied for structural steel elements (if required).**
ITEM 7:	**(Priority 2)**	**Overall stability system.**
ITEM 8:	**(Priority 3)**	**Distress due to water ingress.**
ITEM 9:	**(Priority 3)**	**Reinforcement left exposed at roof level.**

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Item No.	Observation	Recommended Action Plan	Recommended Timeline
1	Priority 1 - In case of the full construction of the originally planned 9 storeys, internal columns on basement floor will be overstressed.	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 4 columns. A Detail Engineering Assessment of Factory to be commenced immediately.	Immediate – Now
2	Priority 1 - In case of the full construction of the originally planned 9 storeys, internal columns on basement floor will be overstressed.	Produce and actively manage a loading plan for all floor plates within the factory giving consideration to floor capacity and column capacity. Detail Engineering Assessment to be completed.	6-weeks
3	Priority 1 - In case of the full construction of the originally planned 9 storeys, internal columns on basement floor will be overstressed.	Continue to implement and maintain the loading plans. Use the results of the DEA to determine if the 9 storeys can be constructed or not.	6-months
4	Priority 1 - Stability and capacity check of the structural elements supporting advertising board at roof level.	Request that the Detail Engineering Assessment of the structural elements supporting the advertising boards to be carried out and in particular, stability and connections aspects should be investigated in detail.	Immediate – Now
5	Priority 1 - Stability and capacity check of the structural elements supporting advertising board at roof level.	Detail Engineering Assessment to be completed.	6-weeks
6	Priority 1 - Stability and capacity check of the structural elements supporting advertising board at roof level.	Complete any actions or recommendations from the DEA.	6-months
7	Priority 2 - Inconsistencies between the drawings and the actual as-built conditions.	Factory Engineer to survey the actual conditions and revise the drawings. Any results of the DEA which affect the structure should be taken on board.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
8	Priority 2 - Stability and capacity check of roof slab supporting water tanks.	Factory Engineer to review design, loads and related elements in area identified above to confirm capacity and stability for these items.	6-weeks
9	Priority 2 - Stability and capacity check of brick wall supporting roof elements.	Factory Engineer to review design, loads and related elements in area identified above to confirm capacity and stability for these items.	6-weeks
10	Priority 2 - No fireproofing material applied for structural steel elements (if required).	Fireproofing material for structural steel element is recommended as suggested in BNBC Codes.	6-weeks
11	Priority 2 - No fireproofing material applied for structural steel elements (if required).	Maintain standard of quality control and protection of the fire protection.	6-months
12	Priority 2 - Overall stability system.	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.	6-weeks
13	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
14	Priority 3 - Reinforcement left exposed at roof level.	For both durability and serviceability, rust proof paint or any appropriate methods is recommended.	6-months